


STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS AND MINING						FORM 3 AMENDED REPORT <input type="checkbox"/>				
<b>APPLICATION FOR PERMIT TO DRILL</b>						1. WELL NAME and NUMBER Anderson 2-21C4				
2. TYPE OF WORK DRILL NEW WELL <input checked="" type="checkbox"/> REENTER P&A WELL <input type="checkbox"/> DEEPEN WELL <input type="checkbox"/>						3. FIELD OR WILDCAT ALTAMONT				
4. TYPE OF WELL Oil Well Coalbed Methane Well: NO						5. UNIT or COMMUNITIZATION AGREEMENT NAME				
6. NAME OF OPERATOR EP ENERGY E&P COMPANY, L.P.						7. OPERATOR PHONE 713 997-5038				
8. ADDRESS OF OPERATOR 1001 Louisiana, Houston, TX, 77002						9. OPERATOR E-MAIL maria.gomez@epenergy.com				
10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE) Fee			11. MINERAL OWNERSHIP FEDERAL <input type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/>			12. SURFACE OWNERSHIP FEDERAL <input type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/>				
13. NAME OF SURFACE OWNER (if box 12 = 'fee') Lincoln Anderson						14. SURFACE OWNER PHONE (if box 12 = 'fee') 801-347-8177				
15. ADDRESS OF SURFACE OWNER (if box 12 = 'fee') 562 E 9000 S, Sandy, UT 84070						16. SURFACE OWNER E-MAIL (if box 12 = 'fee')				
17. INDIAN ALLOTTEE OR TRIBE NAME (if box 12 = 'INDIAN')			18. INTEND TO COMMINGLE PRODUCTION FROM MULTIPLE FORMATIONS YES <input type="checkbox"/> (Submit Commingling Application) NO <input checked="" type="checkbox"/>			19. SLANT VERTICAL <input checked="" type="checkbox"/> DIRECTIONAL <input type="checkbox"/> HORIZONTAL <input type="checkbox"/>				
20. LOCATION OF WELL		FOOTAGES		QTR-QTR	SECTION	TOWNSHIP	RANGE	MERIDIAN		
LOCATION AT SURFACE		860 FNL 1004 FWL		NWNW	21	3.0 S	4.0 W	U		
Top of Uppermost Producing Zone		860 FNL 1004 FWL		NWNW	21	3.0 S	4.0 W	U		
At Total Depth		860 FNL 1004 FWL		NWNW	21	3.0 S	4.0 W	U		
21. COUNTY DUCESNE			22. DISTANCE TO NEAREST LEASE LINE (Feet) 860			23. NUMBER OF ACRES IN DRILLING UNIT 640				
			25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed) 2200			26. PROPOSED DEPTH MD: 11900 TVD: 11900				
27. ELEVATION - GROUND LEVEL 5862			28. BOND NUMBER 400JU0708			29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE Duchesne City				
<b>Hole, Casing, and Cement Information</b>										
String	Hole Size	Casing Size	Length	Weight	Grade & Thread	Max Mud Wt.	Cement	Sacks	Yield	Weight
Cond	17.5	13.375	0 - 600	54.5	J-55 ST&C	9.0	Class G	758	1.15	15.8
Surf	12.25	9.625	0 - 2000	40.0	N-80 LT&C	9.3	Unknown	225	3.16	11.0
							Unknown	194	1.31	14.3
I1	8.75	7	0 - 8950	29.0	HCP-110 LT&C	10.0	Unknown	382	2.31	12.0
							Unknown	216	1.65	13.0
L1	6.125	5	8750 - 11900	18.0	HCP-110 LT&C	12.4	Unknown	187	1.47	14.2
<b>ATTACHMENTS</b>										
<b>VERIFY THE FOLLOWING ARE ATTACHED IN ACCORDANCE WITH THE UTAH OIL AND GAS CONSERVATION GENERAL RULES</b>										
<input checked="" type="checkbox"/> WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER					<input checked="" type="checkbox"/> COMPLETE DRILLING PLAN					
<input checked="" type="checkbox"/> AFFIDAVIT OF STATUS OF SURFACE OWNER AGREEMENT (IF FEE SURFACE)					<input type="checkbox"/> FORM 5. IF OPERATOR IS OTHER THAN THE LEASE OWNER					
<input type="checkbox"/> DIRECTIONAL SURVEY PLAN (IF DIRECTIONALLY OR HORIZONTALLY DRILLED)					<input checked="" type="checkbox"/> TOPOGRAPHICAL MAP					
NAME Maria S. Gomez			TITLE Principal Regulatory Analyst			PHONE 713 997-5038				
SIGNATURE			DATE 04/07/2014			EMAIL maria.gomez@epenergy.com				
API NUMBER ASSIGNED 43013529020000			APPROVAL   Permit Manager							

**Anderson 2-21C4  
Sec. 21, T3S, R4W  
DUCHESNE COUNTY, UT**

**EP ENERGY E&P COMPANY, L.P.**

**DRILLING PROGRAM**

**1. Estimated Tops of Important Geologic Markers**

<u>Formation</u>	<u>Depth</u>
Green River (GRRV)	3,079' TVD
Green River (GRTN1)	4,679' TVD
Mahogany Bench	5,579' TVD
L. Green River	6,879' TVD
Wasatch	8,809' TVD
T.D. (Permit)	11,900' TVD

**2. Estimated Depths of Anticipated Water, Oil, Gas or Mineral Formations:**

<u>Substance</u>	<u>Formation</u>	<u>Depth</u>
	Green River (GRRV)	3,079' MD / TVD
	Green River (GRTN1)	4,679' MD / TVD
	Mahogany Bench	5,579' MD / TVD
Oil	L. Green River	6,879' MD / TVD
Oil	Wasatch	8,809' MD / TVD

**3. Pressure Control Equipment: (Schematic Attached)**

A 4.5" by 20.0" rotating head on structural pipe from surface to 600' MD/TVD. A 4.5" by 13-3/8" Diverter Stack w/ Smith Rotating Head from 600' MD/TVD to 2,000' MD/TVD on Conductor. A 10M BOP stack w/ rotating head, spacer spool, 5M annular, flex rams, blind rams & single w/ flex rams from 2,000' MD/TVD to 8,950' MD/TVD. A 10M BOP stack w/ rotating head, spacer spool, 5M annular, flex rams, blind rams & single w/ flex rams from 8,950' MD/TVD to TD (11,900' MD/TVD).

The BOPE and related equipment will meet the requirements of the 5M and 10M system.

**OPERATORS MINIMUM SPECIFICATIONS FOR BOPE:**

The surface casing will be equipped with a flanged casing head of 5M psi working pressure. An 11" 5M x 11" 10M spool, 11" x 10M psi BOP and 5M psi annular will be nipped up on the surface casing and tested to 250 psi low test / 3,000 psi high test for 10 minutes each prior to drilling out. The surface casing

will be tested to 1,000 psi. for 30 mins. Intermediate casing will be tested to the greater of 1,500 psi or 0.22 psi/ft. The choke manifold equipment, upper Kelly cock and floor safety valves will be tested to 5M psi. The annular preventer will be tested to 250 psi low test / 4,000 psi high test. The 10M BOP will be installed with 3-½" pipe rams, blind rams, mud cross and rotating head from surface shoe to TD. The BOPE will be hydraulically operated.

In addition, the BOP equipment will be tested after running intermediate casing, after any repairs to the equipment and at least once every 30 days. Pipe and blind rams will be activated on each trip, annular preventer will be activated weekly and weekly BOP drills will be held with each crew.

**Statement on Accumulator System and Location of Hydraulic Controls:**

Precision Rig # 406 is expected to be used to drill the proposed well. Operations will commence after approval of this application. Manual and/or hydraulic controls will be in compliance with 5M and 10M psi systems.

**Auxiliary Equipment:**

- A) Pason Gas Monitoring 600' - TD
- B) Mud logger with gas monitor – 2,000' to TD (11,900' MD/TVD)
- C) Choke manifold with one manual and one hydraulic operated choke
- D) Full opening floor valve with drill pipe thread
- E) Upper and lower Kelly cock
- F) Shaker, de-sander and centrifuge

**4. Proposed Casing & Cementing Program:**

Please refer to the attached Wellbore Diagram.

All casing will meet or exceed the following design safety factors:

- Burst = 1.00
- Collapse = 1.125
- Tension = 1.2 (including 100k# overpull)

Cement design calculations for intermediate and production hole will be based on minimum 10% excess over gauge hole volumes. Actual volumes pumped will be a minimum of 10% excess over caliper volume to designed tops of cement for any section logged. A minimum of 50% excess over gauge volume will be pumped on surface casing.

**5. Drilling Fluids Program:**

Proposed Mud Program:

Interval	Type	Mud Weight
Surface	WBM	9.0 – 9.3
Intermediate	WBM	9.4 – 10.0
Production	WBM	10.8 – 12.4

Anticipated mud weights are based on actual offset well bottom-hole pressure data. Mud weights utilized may be somewhat higher to allow for trip margin and to provide hole stability for running logs and casing.

Visual mud monitoring equipment will be utilized.

6. **Evaluation Program:**

Logs:

Mud Log: 2,000' MD/TVD – TD (11,900' MD/TVD)

Open Hole Logs: Gamma Ray, Neutron-Density, Resistivity, Sonic, from surface casing shoe to TD.

7. **Abnormal Conditions:**

Maximum anticipated bottomhole pressure calculated at 11,900' TVD equals approximately 7,673 psi. This is calculated based on a 0.6448 psi/ft gradient (12.4 ppg mud density at TD).

Maximum anticipated surface pressure equals approximately 5,055 psi (bottomhole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/ft).

Maximum anticipated surface pressure based on frac gradient at 7" casing shoe is 0.8 psi/ft at 8,950' TVD = 7,160 psi

BOPE and casing design will be based on the lesser of the two MASPs which is 5,055 psi.

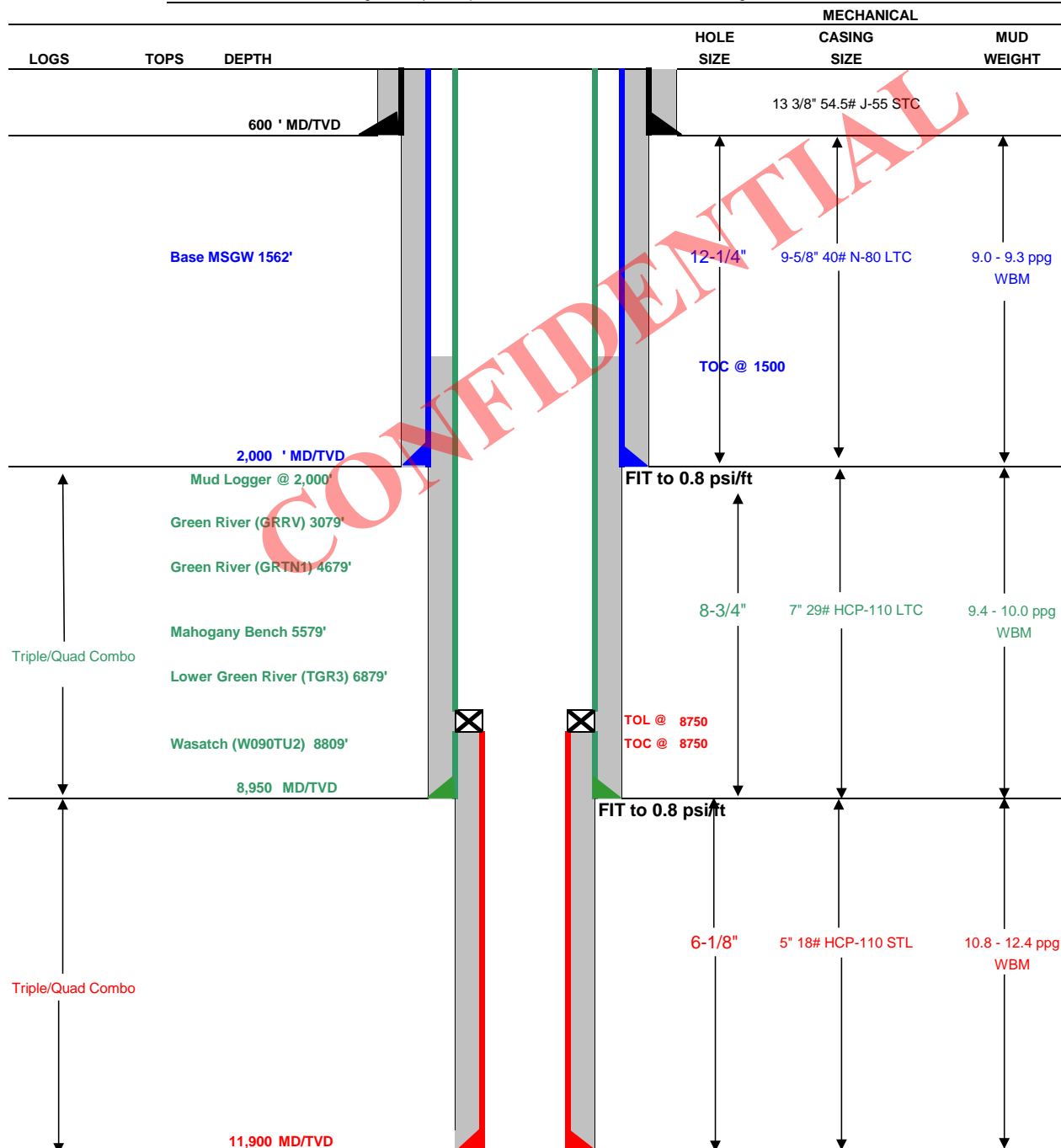
8. **OPERATOR REQUESTS THAT THE PROPOSED WELL BE PLACED ON CONFIDENTIAL STATUS.**





## Drilling Schematic

Company Name: EP ENERGY	Date: April 7, 2014
Well Name: Anderson 2-21C4	TD: 11,900
Field, County, State: Altamont, Duchesne, Utah	AFE #: TBD
Surface Location: Sec 21 T3S R4W 860' FNL 1004' FWL	BHL: Straight Hole
Objective Zone(s): Green River, Wasatch	Elevation: 5861.6
Rig: TBD (Precision 406)	Spud (est.): TBD
BOPE Info: 4.5 x 13 3/8 Diverter System w/ rotating head from 600' to 2,000' 11 10M BOPE w/ rotating head & 5M annular from 2,000' to 8,950' 11 10M BOPE w/ rotating head, spacer spool, 5M annular, flex rams, blind rams, single w/ flex rams from 8,950' to TD	



**DRILLING PROGRAM**

CASING PROGRAM	SIZE	INTERVAL		WT.	GR.	CPLG.	BURST	COLLAPSE	TENSION
CONDUCTOR	13 3/8"	0	600	54.5	J-55	STC	2,740	1,130	514
SURFACE	9-5/8"	0	2000	40.00	N-80	LTC	5,750	3,090	737
INTERMEDIATE	7"	0	8950	29.00	HCP-110	LTC	11,220	9,750	797
PRODUCTION LINER	5'	8750	11900	18.00	HCP-110	STL	13,940	15,450	495

CEMENT PROGRAM		FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
CONDUCTOR		600	Class G + 3% CACL2	758	100%	15.8 ppg	1.15
SURFACE	Lead	1,500	EXTENDACEM SYSTEM: Class V Cement + 5 lbm/sk Silicalite Compacted + 0.25 lbm/sk Kwik Seal + 0.125 lbm/sk Poly-E-Flake + 8% Bentonite + 0.3% D-AIR 5000	225	75%	11.0 ppg	3.16
	Tail	500	HALCEM SYSTEM: Class G Cement + 3 lbm/sk Silicalite Compacted + 1% Salt + 0.3% Econolite + 0.25 lbm/sk Poly-E-Flake + 0.25 lbm/sk Kwik Seal + 0.35% HR-5 + 0.3% D-Air 5000	194	50%	14.3 ppg	1.31
INTERMEDIATE	Lead	5,350	EXTENDACEM SYSTEM: Class G Cement + 10% Bentonite + 0.1% SA-1015 + 0.2% Econolite + 0.2% Halad-322 + 3 lbm/sk Silicalite Compacted + 1 lbm/sk Granulite TR 1/4 + 0.125 lbm/sk Poly-E-Flake + 5 lbm/sk Kol-Seal + 0.8% HR-5	382	10%	12.0 ppg	2.31
	Tail	2,100	BONDCEM SYSTEM: Class G Cement + 4% Bentonite + 0.25 Poly-E-Flake + 0.1% Halad-413 + 5 lb/sk Silicalite Compacted + 0.15% SA-1015 + 0.5% HR-5	216	10%	13.0 ppg	1.65
PRODUCTION LINER		3,150	EXTENDACEM SYSTEM: Class G Cement + 0.3% Super CBL + 0.6% SCR-100 + 0.3% Halad-413 + 0.125 lbm/sk Poly-E-Flake + 3 lbm/sk Silicalite Compacted + 20% SSA-1 + 0.1% SA-1015	187	25%	14.20	1.47

FLOAT EQUIPMENT & CENTRALIZERS	
CONDUCTOR	PDC drillable guide shoe, 1 joint, PDC drillable float collar. Thread lock all float equipment. Install bow spring centralizers on the bottom 3 joints of casing.
SURFACE	PDC drillable guide shoe, 1 joint casing, PDC drillable float collar & Stage collar. Thread lock all float equipment. Install bow spring centralizers on the bottom 3 joints of casing & every 3rd joint thereafter.
INTERMEDIATE	PDC drillable 10M,P-110 float shoe, 1 joint, PDC drillable 10M, P-110 float collar. Thread lock all float equipment. Maker joint at 6,800'.
LINER	Float shoe, 1 joint, float collar, 1 joint, landing collar. Thread lock all FE. Maker joints every 1000'.

PROJECT ENGINEER(S): Brad Macafee 713-997-6383

MANAGER: Bob Dodd

EP ENERGY E&P COMPANY, L.P.  
ANDERSON 2-21C4  
SECTION 21, T3S, R4W, U.S.B.&M.

PROCEED NORTH ON PAVED STATE HIGHWAY 87 FROM THE INTERSECTION OF HIGHWAY 87 WITH U.S. HIGHWAY 40 IN DUCHESNE, UTAH APPROXIMATELY 3.41 MILES TO AN INTERSECTION;

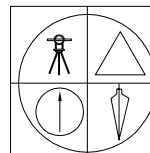
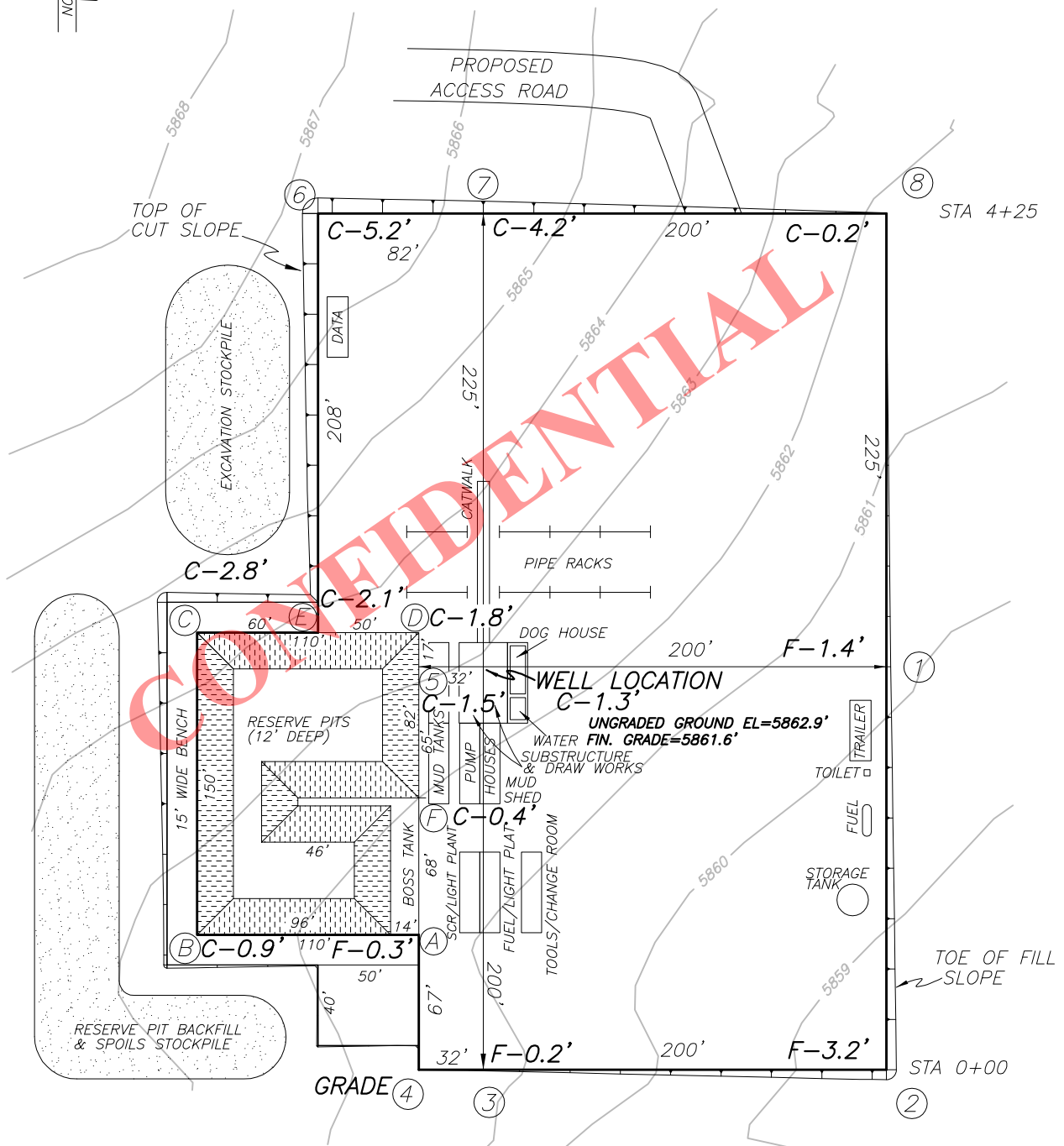
TURN RIGHT AND TRAVEL EAST 2.35 MILES ON A GRAVEL COUNTY ROAD TO THE BEGINNING OF THE ACCESS ROAD;

TURN RIGHT AND FOLLOW ROAD FLAGS SOUTH, THEN WEST 0.19 MILES TO THE PROPOSED WELL LOCATION;

TOTAL DISTANCE FROM DUCHESNE, UTAH TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 5.95 MILES.

LOCATION LAYOUT FOR  
ANDERSON 2-21C4  
SECTION 21, T3S, R4W, U.S.B.&M.  
860' FNL, 1004' FWL

FIGURE #1



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**EP ENERGY E & P COMPANY, L.P.****FIGURE #2**

LOCATION LAYOUT FOR

ANDERSON 2-21C4

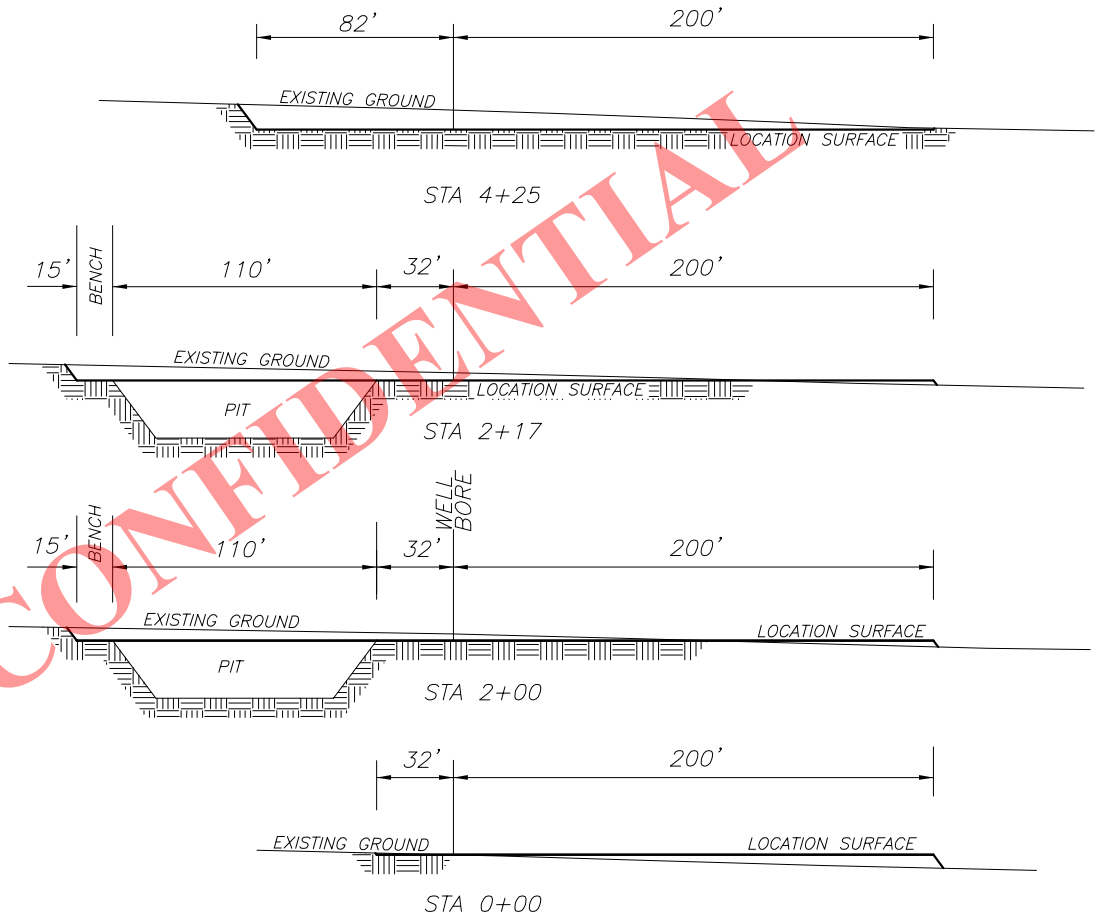
SECTION 21, T3S, R4W, U.S.B.&amp;M.

860' FNL, 1004' FWL

1"=40'  
X-SECTION  
SCALE

1"=80'

NOTE: ALL CUT/FILL  
SLOPES ARE 1½:1  
UNLESS OTHERWISE  
NOTED

APPROXIMATE QUANTITIES

TOTAL CUT (INCLUDING PIT) = 11,203 CU. YDS.

PIT CUT = 4572 CU. YDS.

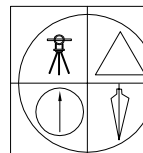
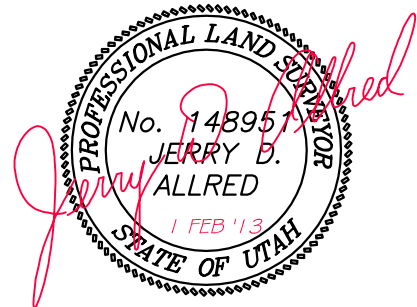
TOPSOIL STRIPPING: (6") = 2549 CU. YDS.

REMAINING LOCATION CUT = 4082 CU. YDS.

TOTAL FILL = 3159 CU. YDS.

LOCATION SURFACE GRAVEL=1374 CU. YDS. (4" DEEP)

ACCESS ROAD GRAVEL=254 CU. YDS.



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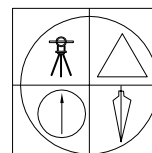
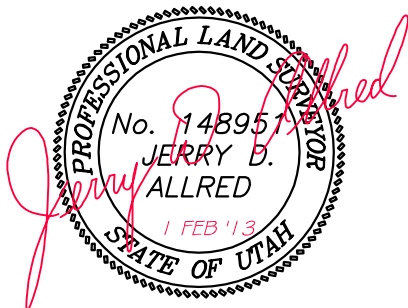
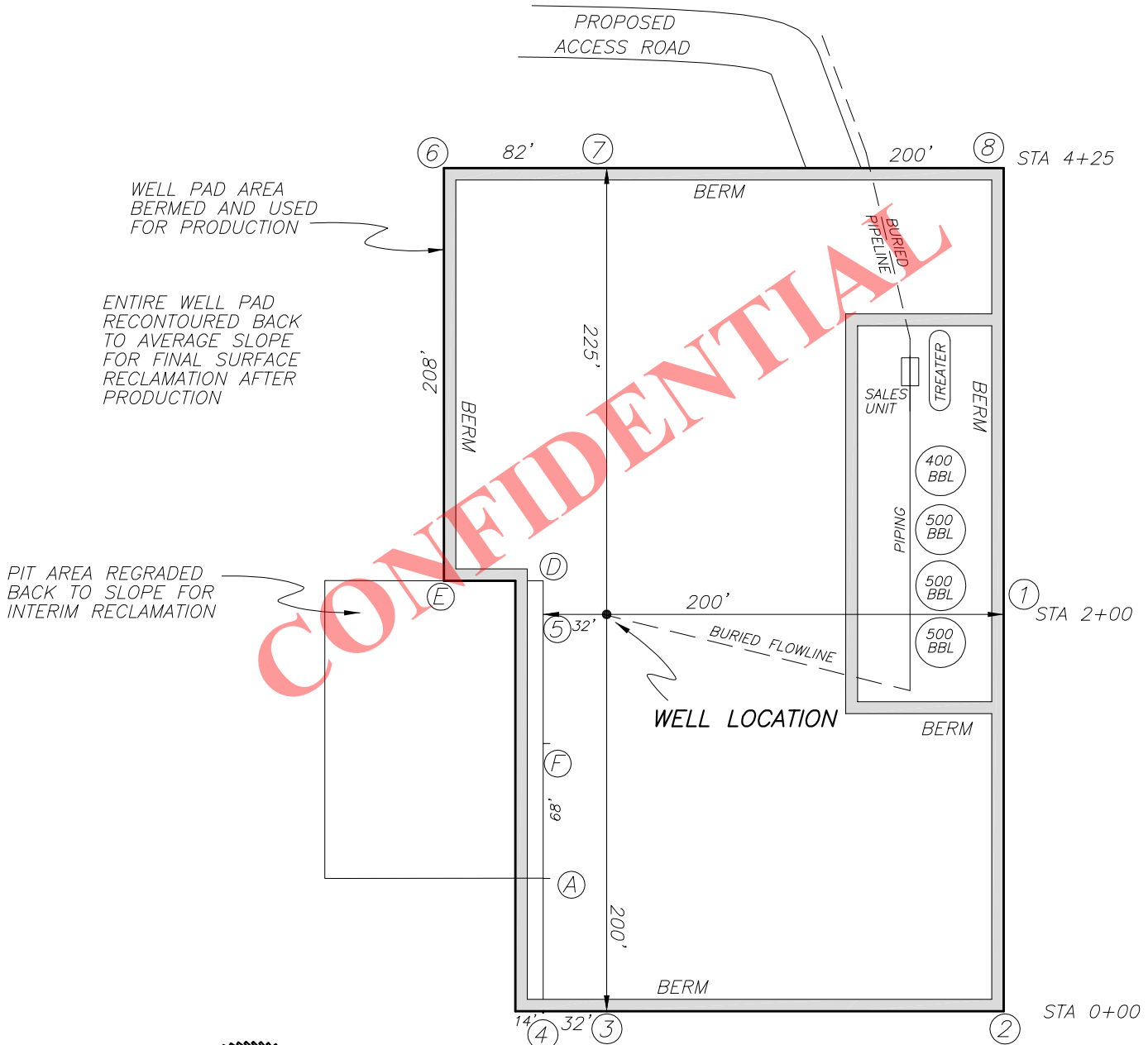
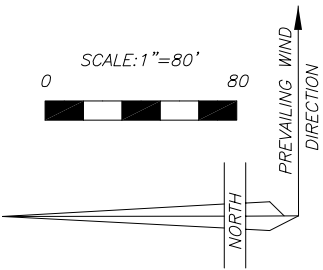
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**EP ENERGY E & P COMPANY, L.P.****FIGURE #3**

LOCATION LAYOUT FOR  
ANDERSON 2-21C4  
SECTION 21, T3S, R4W, U.S.B.&M.  
860' FNL, 1004' FWL



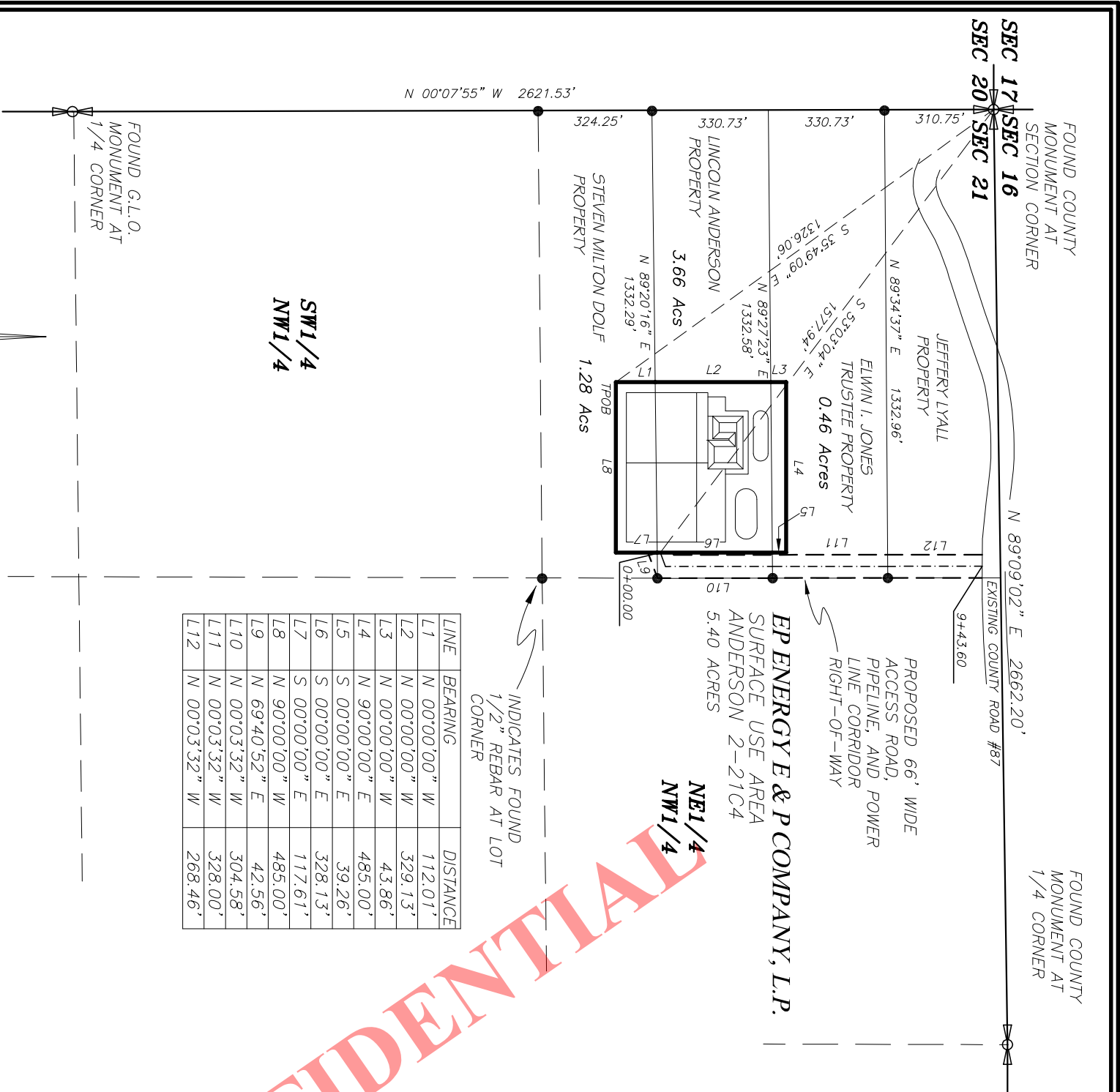
**JERRY D. ALLRED & ASSOCIATES**  
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LINE	BEARING	DISTANCE
L1	N 00°00'00\"	112.01'
L2	N 00°00'00\"	329.13'
L3	N 00°00'00\"	43.86'
L4	N 90°00'00\"	485.00'
L5	S 00°00'00\"	39.26'
L6	S 00°00'00\"	328.13'
L7	S 00°00'00\"	117.61'
L8	N 90°00'00\"	485.00'
L9	N 69°40'52\"	42.56'
L10	N 00°03'32\"	304.58'
L11	N 00°03'32\"	328.00'
L12	N 00°03'32\"	268.46'

INDICATES FOUND  
1/2\"

LOCATION USE AREA, ACCESS ROAD, PIPELINE, AND POWER LINE  
CORRIDOR RIGHT-OF-WAY SURVEY FOR  
**EP ENERGY E&P COMPANY, L.P.**  
ANDERSON 2-21C4  
NW1/4, NW1/4, SECTION 21, TOWNSHIP 3 SOUTH, RANGE 4 WEST, U.S.B.&M.  
DUCHESSNE COUNTY, UTAH

USE AREA BOUNDARY DESCRIPTION

Commencing at the Northwest Corner of Section 21, Township 3 South, Range 4 West of the Uintah Special Base and Meridian;  
Thence South 35°49'09\"

ACCESS ROAD, PIPELINE, AND POWER LINE CORRIDOR RIGHT-OF-WAY DESCRIPTION

A 66 feet wide access road, pipeline, and power line corridor right-of-way over portions of Section 21, Township 3 South, Range 4 West of the Uintah Special Base and Meridian, the centerline of which is further described as follows:  
Commencing at the Northwest Corner of said Section;  
Thence South 53°03'04\"

SURVEYOR'S CERTIFICATE

This is to certify that this plat was prepared from the field notes and electronic data collector files of an actual survey made by me, or under my personal supervision, of the use area and access road, pipeline, and power line right-of-way shown hereon, and that the monuments indicated were found or set during said survey, and that this plat accurately represents said survey to the best of my knowledge.



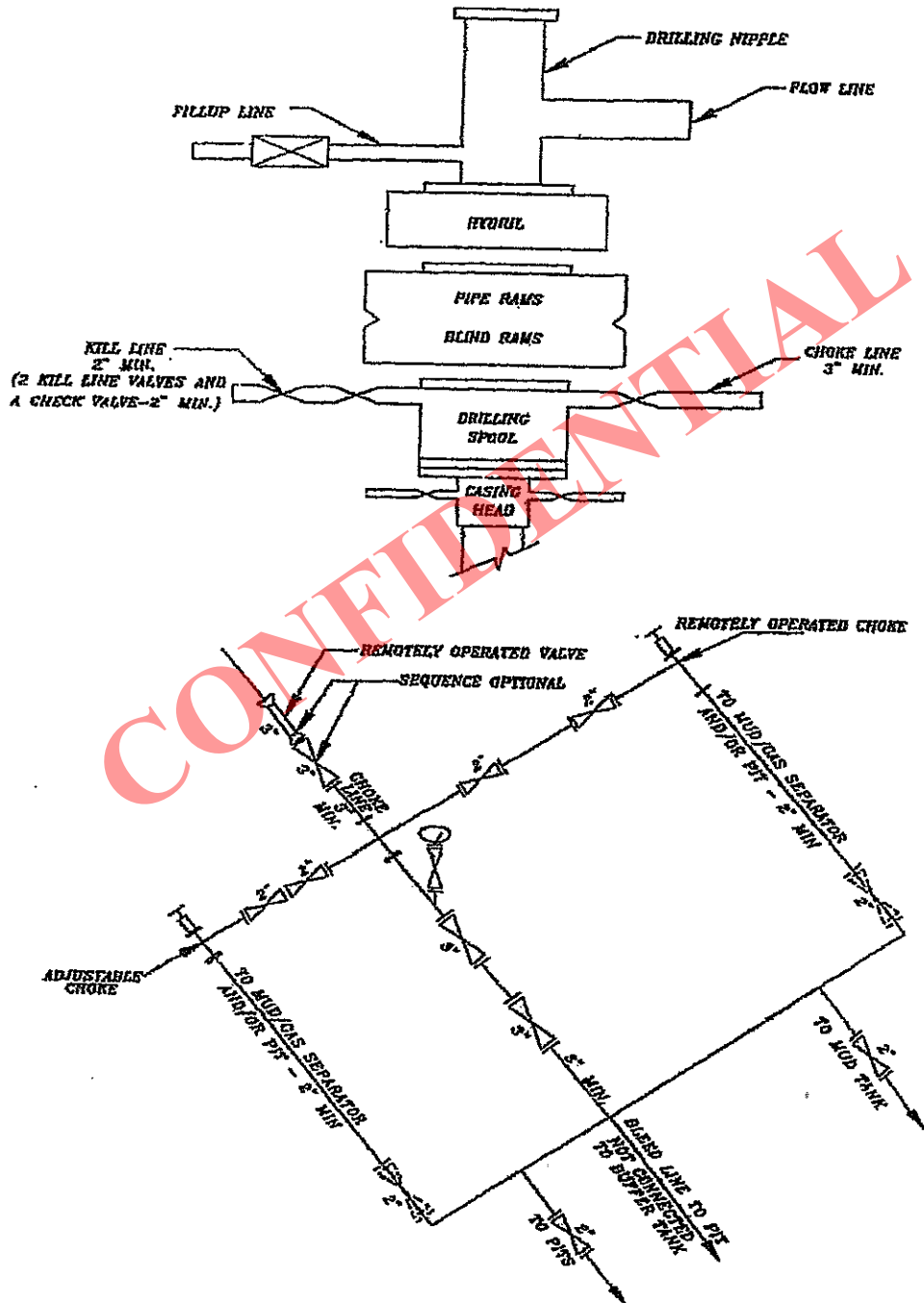
Jerry D. Allred, Professional Land Surveyor,  
Certificate 148951 (Utah)

THIS SURVEY WAS PERFORMED USING GLOBAL POSITIONING SYSTEM PROCEDURES AND EQUIPMENT  
THE BASIS OF BEARINGS IS GEODETIC NORTH DERIVED FROM G.P.S. OBSERVATIONS AT THE SECTION CORNER LOCATED AT LAT. 40°15'22.90258\"

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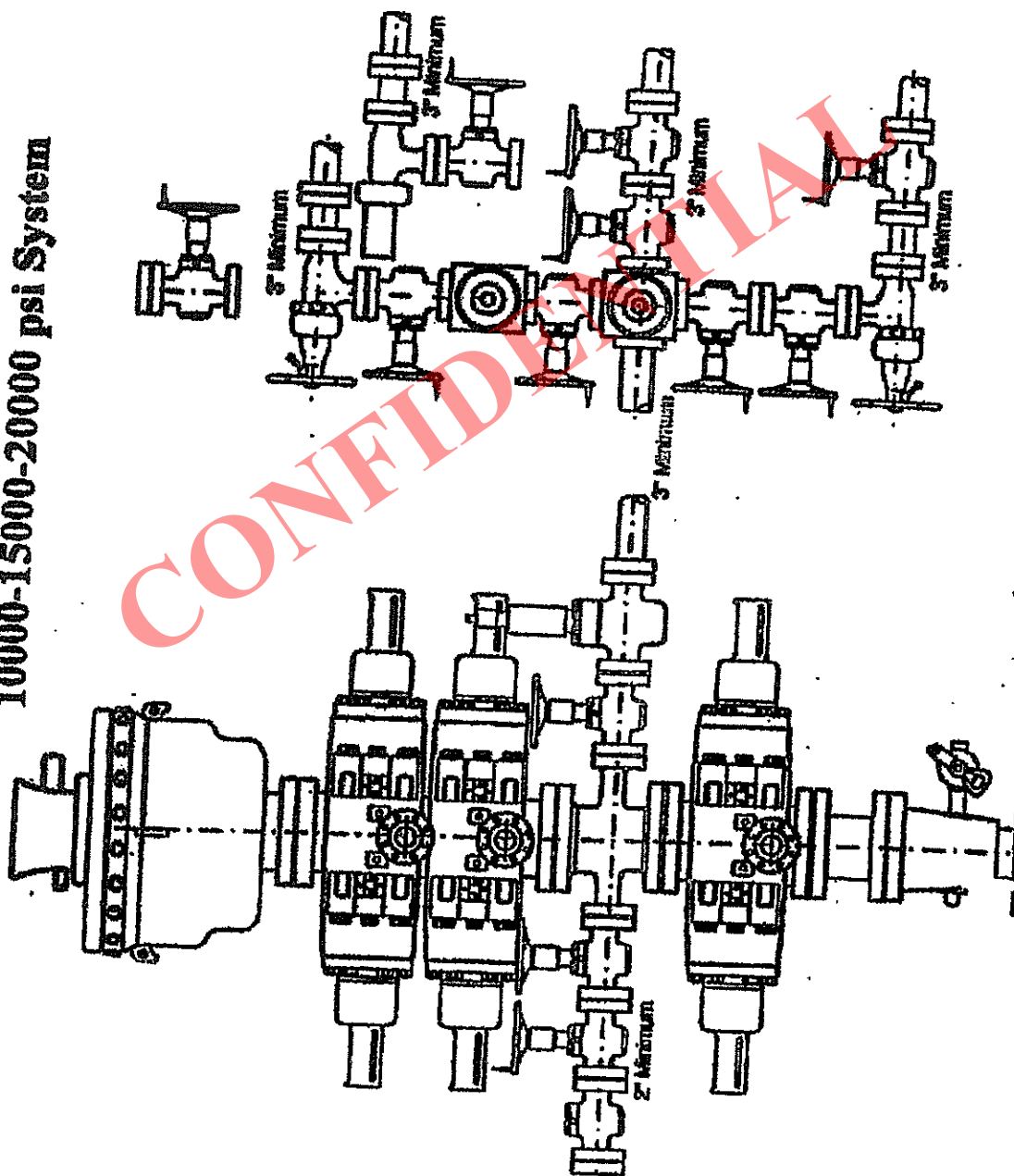
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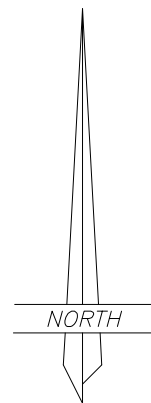
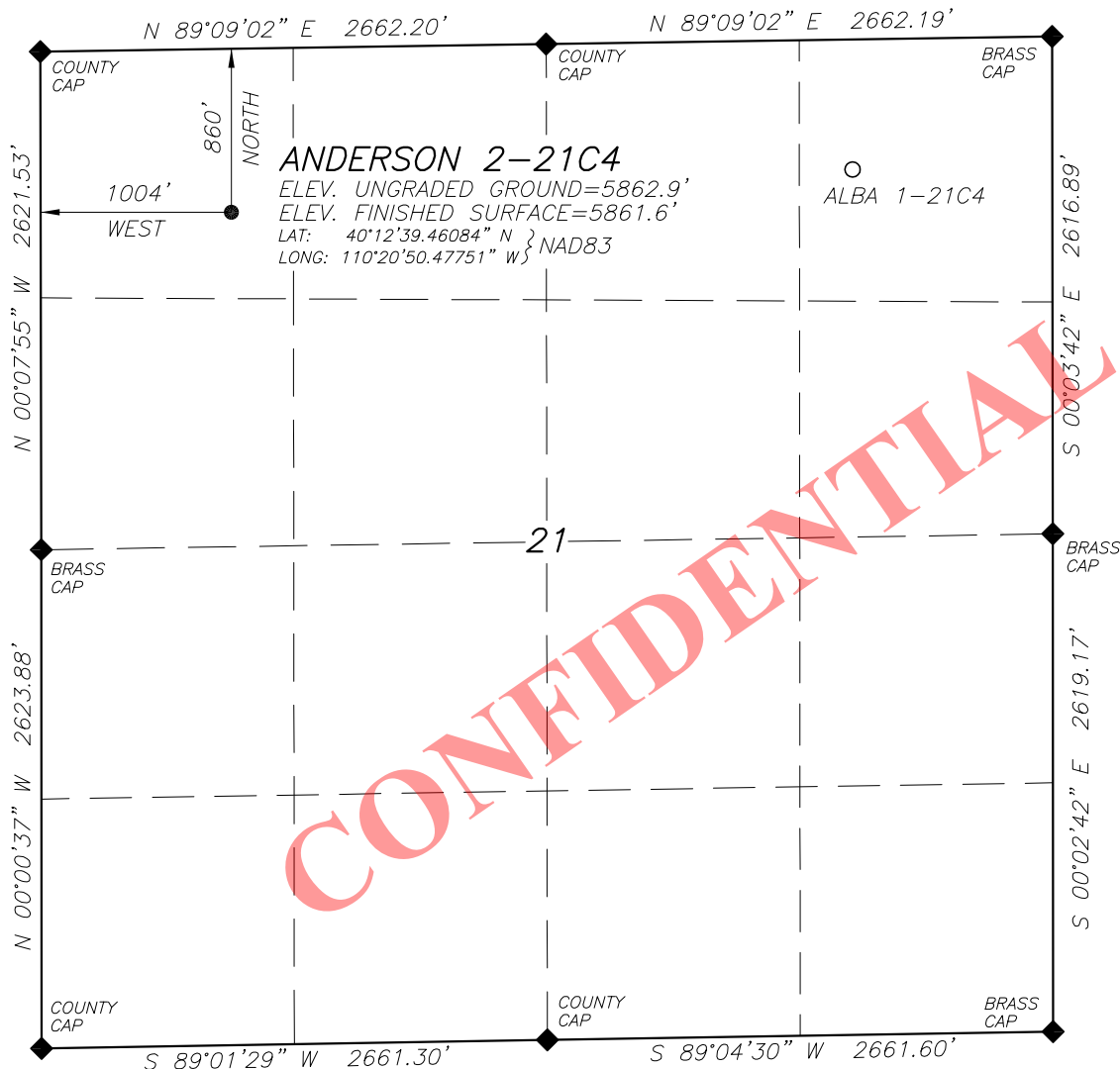
## 5M BOP STACK and CHOKE MANIFOLD SYSTEM



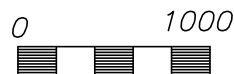


10000-15000-20000 psi System



**EP ENERGY E & P COMPANY, L.P.****WELL LOCATION****ANDERSON 2-21C4**LOCATED IN THE NW¼ OF THE NW¼ OF  
SECTION 21, T3S, R4W, U.S.B.&M.  
DUCHESE COUNTY, UTAH

SCALE: 1"=1000'



NOTE:  
NAD27 VALUES FOR  
WELL POSITION:  
LAT: 40.211004036° N  
LONG: 110.346644206° W

**LEGEND AND NOTES**

- ◆ CORNER MONUMENTS FOUND AND USED BY THIS SURVEY

THE GENERAL LAND OFFICE (G.L.O.) PLAT WAS USED FOR REFERENCE AND CALCULATIONS AS WAS THE U.S.G.S. MAP

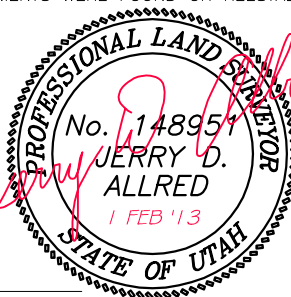
THIS SURVEY WAS PERFORMED USING GLOBAL POSITIONING SYSTEM PROCEDURES AND EQUIPMENT

THE BASIS OF BEARINGS IS GEODETIC NORTH DERIVED FROM G.P.S. OBSERVATIONS AT THE SECTION CORNER LOCATED AT LAT. 40°15'22.90258"N AND LONG. 110°23'21.19760"W USING THE UTAH STATE G.P.S. VIRTUAL REFERENCE STATION CONTROL NETWORK MAINTAINED AND OPERATED BY THE AUTOMATED GEOGRAPHIC REFERENCE CENTER

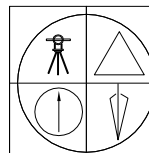
BASIS OF ELEVATIONS: NAVD 88 DATUM USING THE UTAH REFERENCE NETWORK CONTROL SYSTEM

**SURVEYOR'S CERTIFICATE**

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM THE FIELD NOTES AND ELECTRONIC DATA COLLECTOR FILES OF AN ACTUAL SURVEY PERFORMED BY ME, OR UNDER MY PERSONAL SUPERVISION, DURING WHICH THE SHOWN MONUMENTS WERE FOUND OR REESTABLISHED.



JERRY D. ALLRED, PROFESSIONAL LAND SURVEYOR,  
CERTIFICATE NO. 148951 (UTAH)



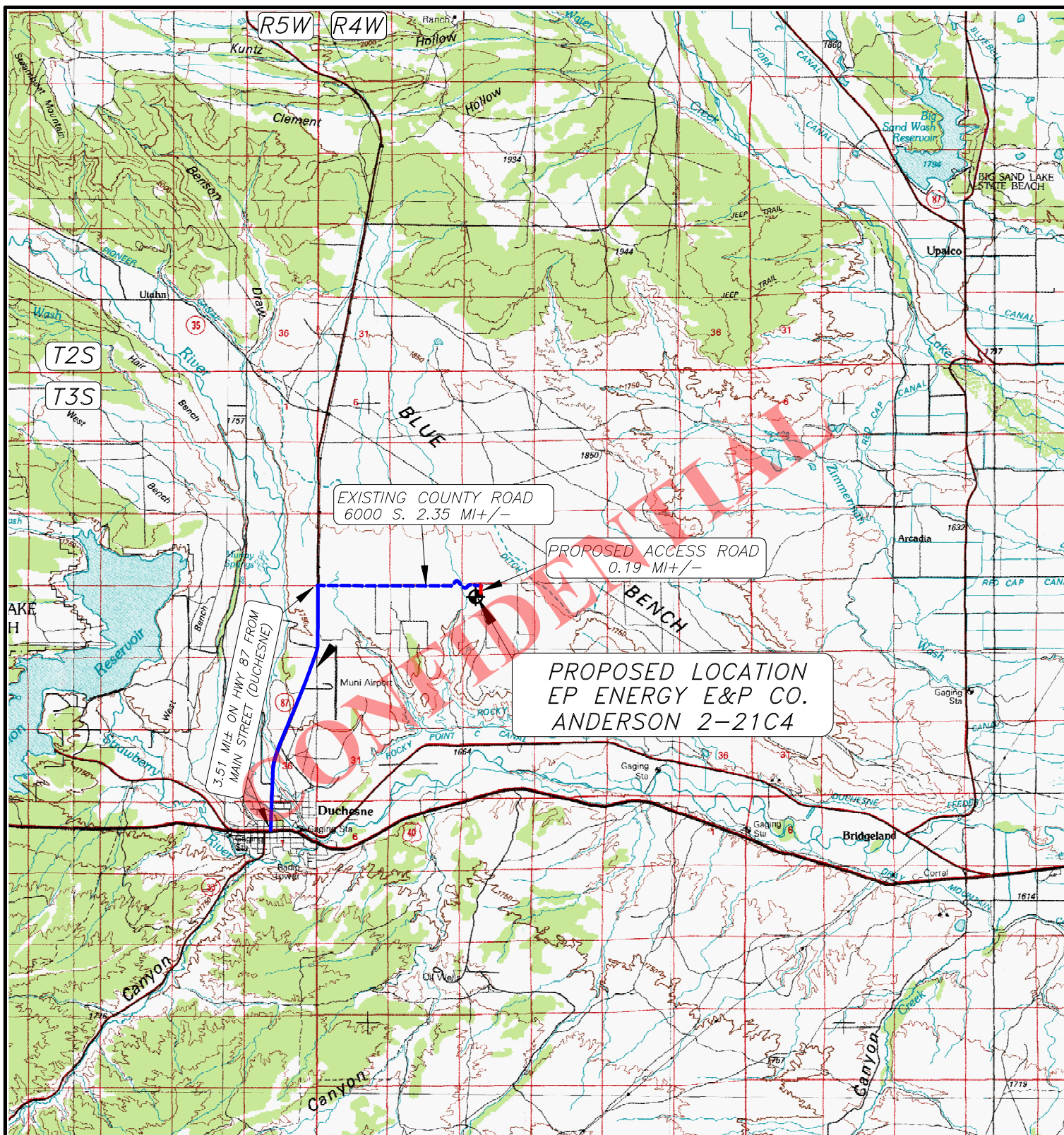
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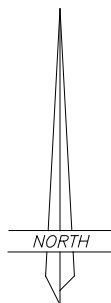
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**LEGEND:**

PROPOSED WELL LOCATION

01-128-363

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**EP ENERGY E & P COMPANY, L.P.**

ANDERSON 2-21C4

SECTION 21, T3S, R4W, U.S.B.&amp;M.

860' FNL 1004' FWL

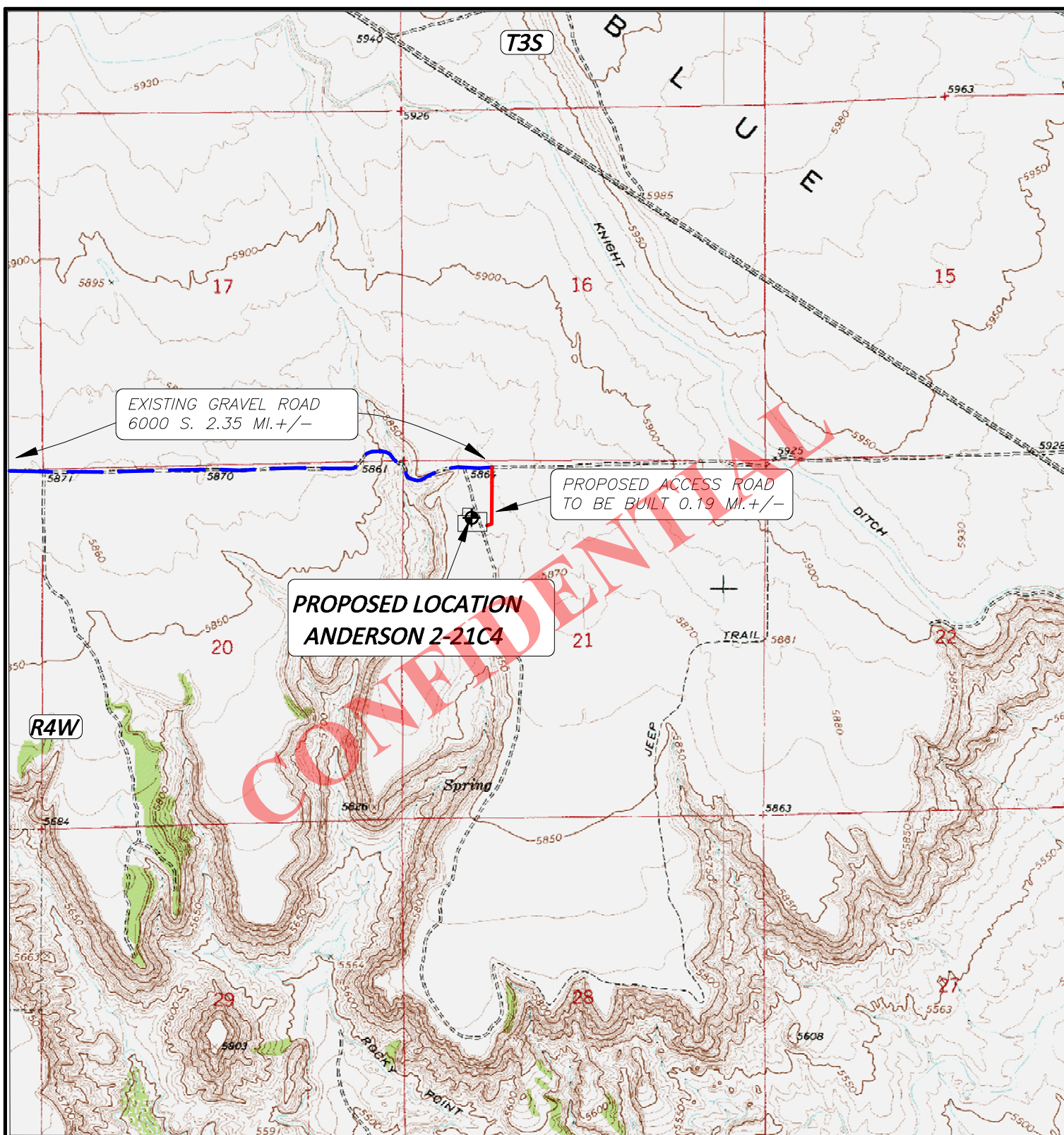
**TOPOGRAPHIC MAP "A"**

SCALE: 1"=10,000'





4 FEB 2013

**RECEIVED:** April 07, 2014

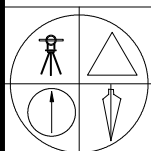




# **LEGEND:**

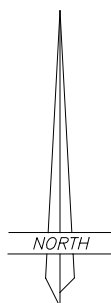
-  **PROPOSED WELL LOCATION**
-  **PROPOSED ACCESS ROAD**
-  **EXISTING GRAVEL ROAD**
-  **EXISTING PAVED ROAD**

01-128-363



**JERRY D. ALLRED & ASSOCIATES**  
SURVEYING CONSULTANTS

1235 NORTH 700 EAST--P.O. BOX 975  
DUCHESTER, UTAH 84021  
(435) 738-5352



**EP ENERGY E & P COMPANY, L.P.**

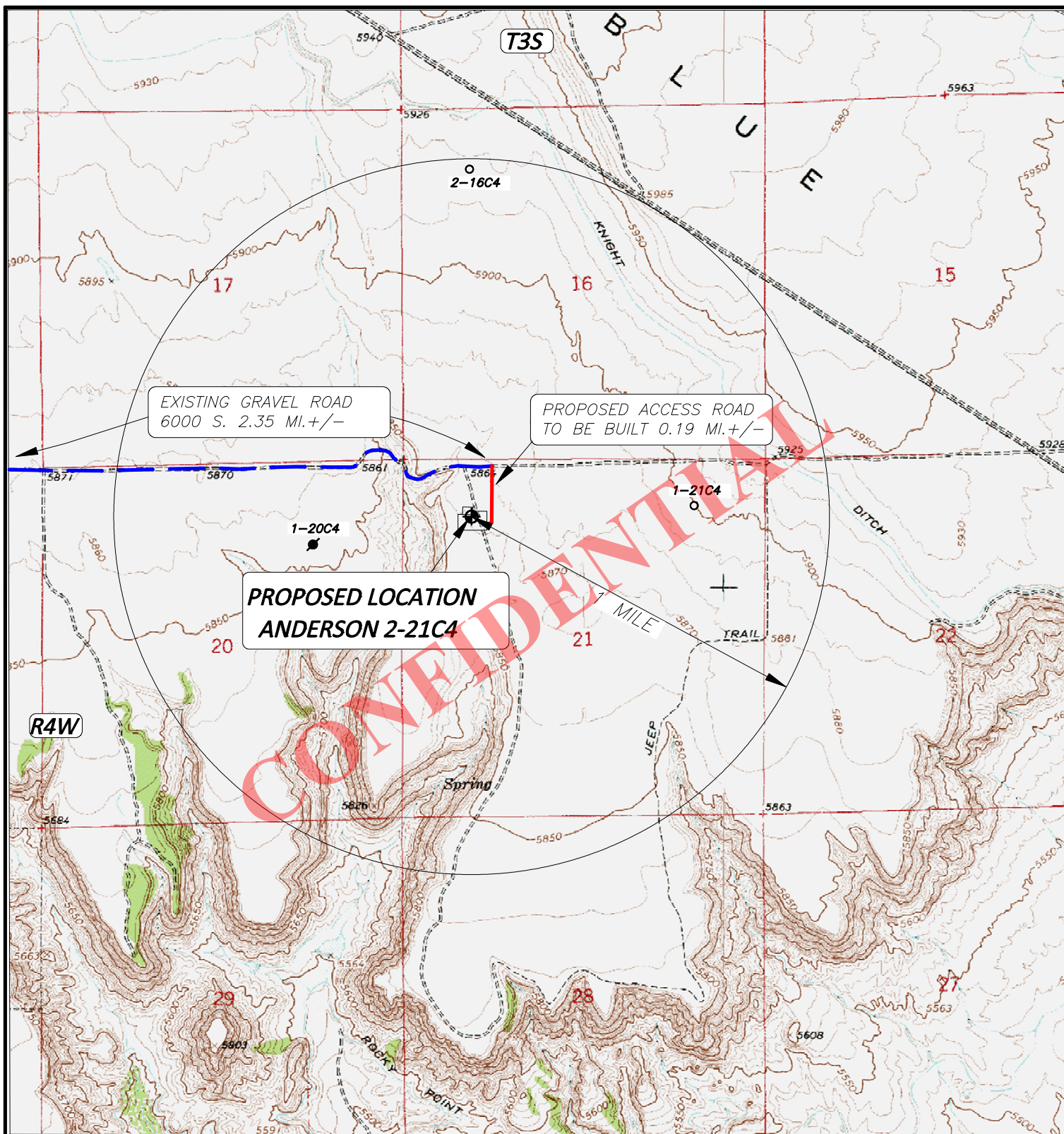
ANDERSON 2-21C4  
SECTION 21, T3S, R4W, U.S.B.&M.  
860' FNL 1004' FWL

**TOPOGRAPHIC MAP "B"**

SCALE: 1"=2000'  
4 FEB 2013

**RECEIVED:** April 07, 2014

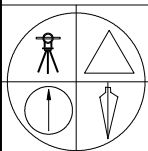


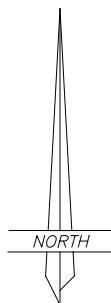
**LEGEND:**

PROPOSED WELL LOCATION

OTHER WELLS AS LOCATED FROM SUPPLIED MAP

01-128-363


**JERRY D. ALLRED & ASSOCIATES**  
SURVEYING CONSULTANTS

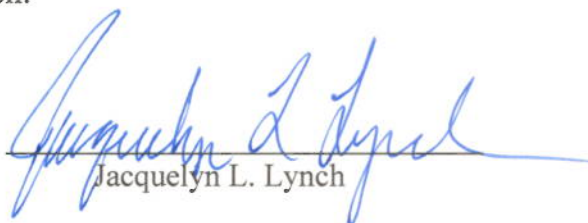
 1235 NORTH 700 EAST--P.O. BOX 975  
DUCHESE, UTAH 84021  
(435) 738-5352
**EP ENERGY E & P COMPANY, L.P.**
 ANDERSON 2-21C4  
SECTION 21, T3S, R4W, U.S.B.&M.  
860' FNL 1004' FWL
**TOPOGRAPHIC MAP "C"**
 SCALE: 1"=2000'  
4 FEB 2013
**RECEIVED:** April 07, 2014

**AFFIDAVIT OF DAMAGE SETTLEMENT AND RELEASE**

Jacquelyn L. Lynch personally appeared before me, and, being duly sworn, deposes and says:

1. My name is Jacquelyn L. Lynch. I am a Landman for EP Energy E&P Company, L.P., whose address is 1001 Louisiana St., Houston, Texas 77002 ("EP Energy").
2. EP Energy is the operator of the proposed Anderson 2-21C4 well (the "Well") to be located in the NW/4NW/4 of Section 21, Township 3 South, Range 4 West, USM, Duchesne County, Utah (the "Drillsite Location"). The surface owners of the Drillsite Location and their contact information is as follows ("Surface Owners"):
  - A. **LINCOLN ANDERSON - (801) 347-8177**  
562 E 9000 S, SANDY, UT 84070
  - B. **PAUL ELWIN JONES – CONTACT VIA MATTHEW SHANE JONES, BELOW**  
92 FRONTIER DRIVE, WASHINGTON, UT 84770  
**MATTHEW SHANE JONES, HUSBAND OF JEREMEE JOY JONES - (308) 254-4010 (CELL), (308) 254-4010 (HOME)**  
1542 JACKSON STREET, SIDNEY, NE 69162
  - C. **STEVEN MILTON DOLF - (714) 345-8365**  
19789 EVELYN STREET, CORONA, CA 92881
3. EP Energy and the Surface Owners have entered into a Damage Settlement and Release Agreements to cover any and all injuries or damages of every character and description sustained by the Surface Owners or Surface Owners' property as a result of operations associated with the drilling of the Well.

FURTHER AFFIANT SAYETH NOT.

  
Jacquelyn L. Lynch

**ACKNOWLEDGMENT**

STATE OF TEXAS

§  
§  
§

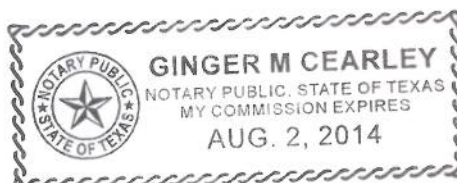
COUNTY OF HARRIS

Sworn to and subscribed before me on this 31st day of March, 2014, by Jacquelyn L. Lynch, as Landman for EP Energy E&P Company, L.P., a Delaware limited partnership.

  
NOTARY PUBLIC

My Commission Expires:

8/2/2014





EP Energy E&P Company, L.P.

**Related Surface Information**

**1. Current Surface Use:**

- Livestock Grazing and Oil and Gas Production.

**2. Proposed Surface Disturbance:**

- The road will be crown and ditch. Water wings will be constructed on the access road as needed.
- The topsoil will be windrowed and re-spread in the borrow area.
- New road to be constructed will be approximately .19 miles in length and 66 feet wide.
- All equipment and vehicles will be confined to the access road, pad and area specified in the APD.

**3. Location Of Existing Wells:**

- Existing oil, gas wells within one (1) mile radius of proposed well are provided in EXHIBIT C.

**4. Location And Type Of Drilling Water Supply:**

- Drilling water: Duchesne City Water

**5. Existing/Proposed Facilities For Productive Well:**

- There are no existing facilities that will be utilized for this well.
- A pipeline corridor .19 miles will parallel the proposed access road. The corridor will contain one 4 inch gas line and one 2 inch gas line and one 2 inch Salt Water disposal line. Rehabilitation of unneeded, previously disturbed areas will consist of backfilling and contouring the reserve pit area; backsloping and contouring all cut and fill slopes. These areas will be reseeded. Refer to plans for reclamation of surface for details.
- Upgrade and maintain access roads and drainage control structures (e.g., culverts, drainage dips, ditching, etc.) as necessary to prevent soil erosion and accommodate safe, year-round traffic.

**6. Construction Materials:**

- Native soil from road and location will be used for construction materials along with gravel and/or scoria road base material. In the event that conditions should necessitate graveling of all or part of the access road and location, surfacing materials will be purchased from commercial suppliers in the marketing area.

**7. Methods For Handling Waste Disposal:**

- The reserve pit will be designed to prevent the collection of surface runoff and will be constructed with a minimum of ½ the total depth below the original ground surface on the lowest point with the pit. The pit will be lined with a 20-mil polyethylene to prevent leakage of fluids. The liner will be rolled into place and secured at the ends, i.e. buried on top of the pit berms. Prior to use, the reserve pit will be fenced on three sides; the fourth side will be fenced at the time the rig is removed. Drilling fluids, cuttings and produced water will be contained in the reserve pit (trash will be placed in the trash cage). Fluids in the reserve pit will be allowed to evaporate prior to pit burial.
- Garbage and other trash will be contained in the portable trash cage and hauled off the location to an authorized disposal site. Any trash on the pad will be cleaned up prior to the rig moving off location and hauled to an authorized disposal site.
- Sewage will be handled in Portable Toilets.
- Produced water will be placed in the reserve pit for a period not to exceed ninety days after initial production. Any hydrocarbons produced during completion work will be contained in test tanks and removed from the location at a later date.
- Water from the reserve pit may be used for drilling of additional wells. The water will be trucked along access roads as approved in pertinent APD's

**8. Ancillary Facilities:**

- There will be no ancillary facilities associated with this project.

**9. Surface Reclamation Plans:**

Backfilling of the pits will be done when dry. In the event of a dry hole, the location will be re-contoured, the topsoil will be distributed evenly over the entire location, and the seedbed prepared.

- Seed will be planted after September 15<sup>th</sup>, and prior to ground frost, or seed will be planted after the frost has left and before May 15<sup>th</sup>. Slopes to steep for machinery will be hand broadcast and raked with twice the specified amount of seed.
  1. The construction program and design are on the attached cut, fill and cross sectional diagrams.
  2. Prior to construction, all topsoil will be removed from the entire site and stockpiled. Topsoil for this site is the first 6 inches of soil materials.
  3. After the location has been reshaped and after redistributing the topsoil, the operator will rip and scarify the drilling platform and access road on the contour, to a depth of at least 12 inches.
- Rehabilitation will begin upon the completion of the drilling. Complete rehabilitation will depend on weather conditions and the amount of time required to dry the reserve pit.
  1. All rehabilitation work including seeding will be completed as soon as weather and the reserve pit conditions are appropriate.
  2. Landowner will be contacted for rehabilitation requirements.

10. **Surface Ownership:**

**A. LINCOLN ANDERSON - (801) 347-8177**

562 E 9000 S, SANDY, UT 84070

**B. PAUL ELWIN JONES – CONTACT VIA MATTHEW SHANE JONES  
BELOW**

92 FRONTIER DRIVE, WASHINGTON, UT 84770

**MATTHEW SHANE JONES, HUSBAND OF JEREMEE JOY JONES - (3**

**254-4010 (CELL), (308) 254-4010 (HOME)**

1542 JACKSON STREET, SIDNEY, NE 69162

**C. STEVEN MILTON DOLF - (714) 345-8365**

19789 EVELYN STREET, CORONA, CA 92881

11. **Other Information:**

- The surface soil consists of clay, and silt.
- Flora – vegetation consists of the following: Sagebrush, Juniper and prairie grasses.
- Fauna – antelope, deer, coyotes, raptors, small mammals, and domestic grazing animals.
- Current surface uses – Livestock grazing and mineral exploration and production.

• **Operator and Contact Persons:**

**Construction and Reclamation:**

EP Energy E&P Company, L.P.

Wayne Garner

PO Box 410

Altamont, Utah 84001

435-454-3394 – Office

435-823-1490 – Cell

**Regarding This APD**

EP Energy E&P Company, L.P.

Maria S. Gomez

1001 Louisiana, Rm 2730D

Houston, Texas 77002

713-997-5038 – Office

**Drilling**

EP Energy E&P Company, L.P.

Brad MacAfee – Drilling Engineer

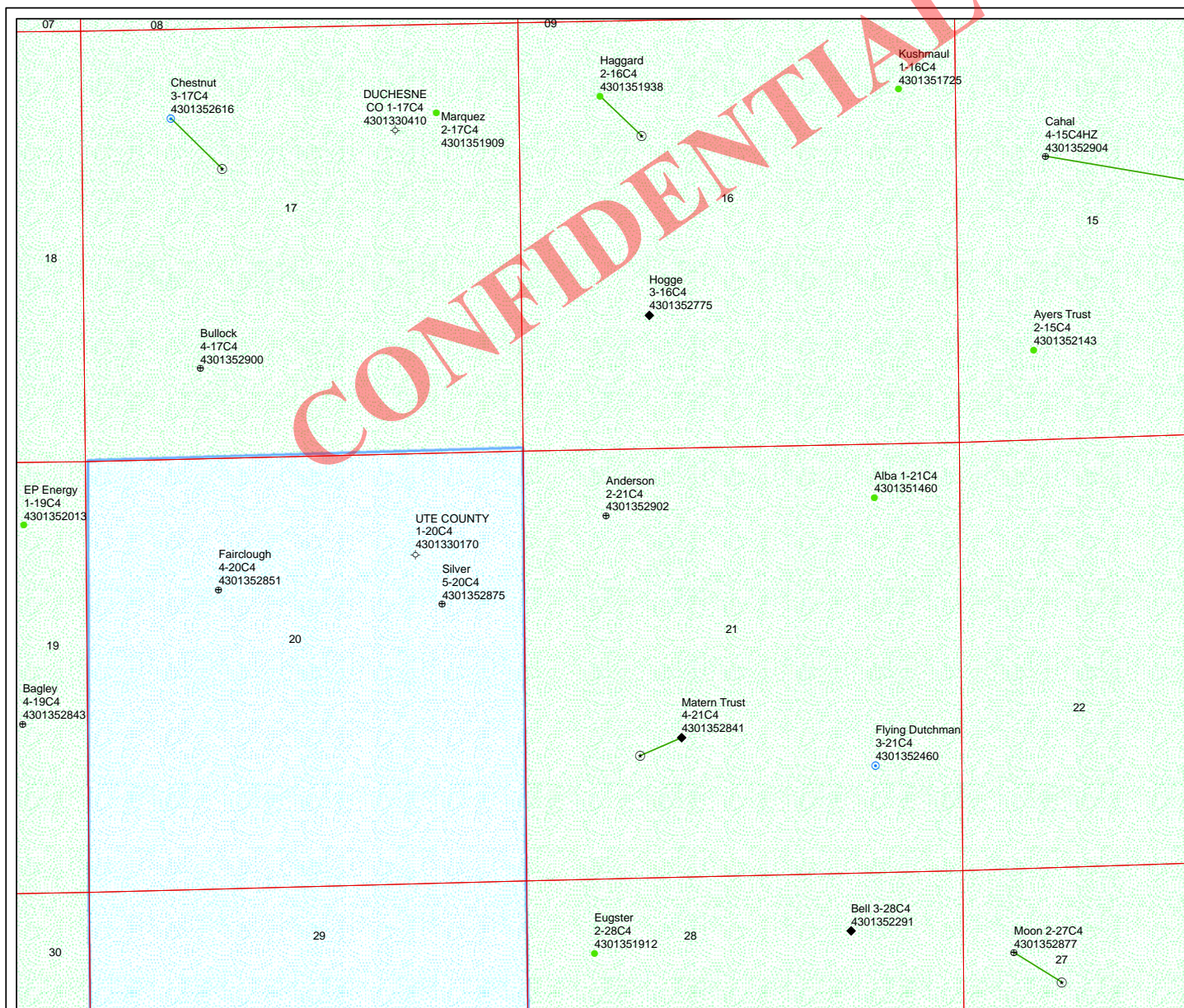
1001 Louisiana, Rm 2660D

Houston, Texas 77002

713-997-6383 – office

281-813-0902 – Cell





API Number: 4301352902

Well Name: Anderson 2-21C4

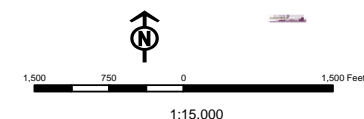
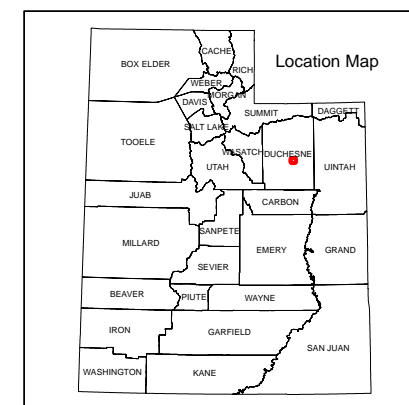
Township: T03.0S Range: R04.0W Section: 21 Meridian: U

Operator: EP ENERGY E&amp;P COMPANY, L.P.

Map Prepared: 4/9/2014  
Map Produced by Diana Mason

Wells Query		Units	
Status		STATUS	
APD - Approved Permit		ACTIVE	
DRL - Spudded (Drilling Commenced)		EXPLORATORY	
GRW - Gas Injection		GAS STORAGE	
GS - Gas Storage		NF PP OIL	
LOC - New Location		NF SECONDARY	
OPS - Operation Suspended		PI OIL	
PA - Plugged Abandoned		PP GAS	
PGW - Producing Gas Well		PP GEOTHERML	
POW - Producing Oil Well		PP OIL	
SGW - Shut-in Gas Well		SECONDARY	
SWW - Shut-in Oil Well		TERMINATED	
TA - Temp. Abandoned			
TW - Test Well			
WOW - Water Disposal			
WW - Water Injection Well			
WSW - Water Supply Well			

Fields	
STATUS	
Unknown	
ABANDONED	
ACTIVE	
COMBINED	
INACTIVE	
STORAGE	
TERMINATED	



Well Name	EP ENERGY E&P COMPANY, L.P. Anderson 2-21C4 43013529020000			
String	Cond	Surf	I1	L1
Casing Size(")	13.375	9.625	7.000	5.000
Setting Depth (TVD)	600	2000	8950	11900
Previous Shoe Setting Depth (TVD)	0	600	2000	8950
Max Mud Weight (ppg)	9.0	9.3	10.0	12.4
BOPE Proposed (psi)	1000	1000	10000	10000
Casing Internal Yield (psi)	2730	5750	11220	13940
Operators Max Anticipated Pressure (psi)	7673			12.4

Calculations	Cond String	13.375	"
Max BHP (psi)	.052*Setting Depth*MW=	281	
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	209	YES 4.5 x 20 rotating head
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	149	YES OK
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	149	NO OK
Required Casing/BOPE Test Pressure=		600	psi
*Max Pressure Allowed @ Previous Casing Shoe=		0	psi *Assumes 1psi/ft frac gradient

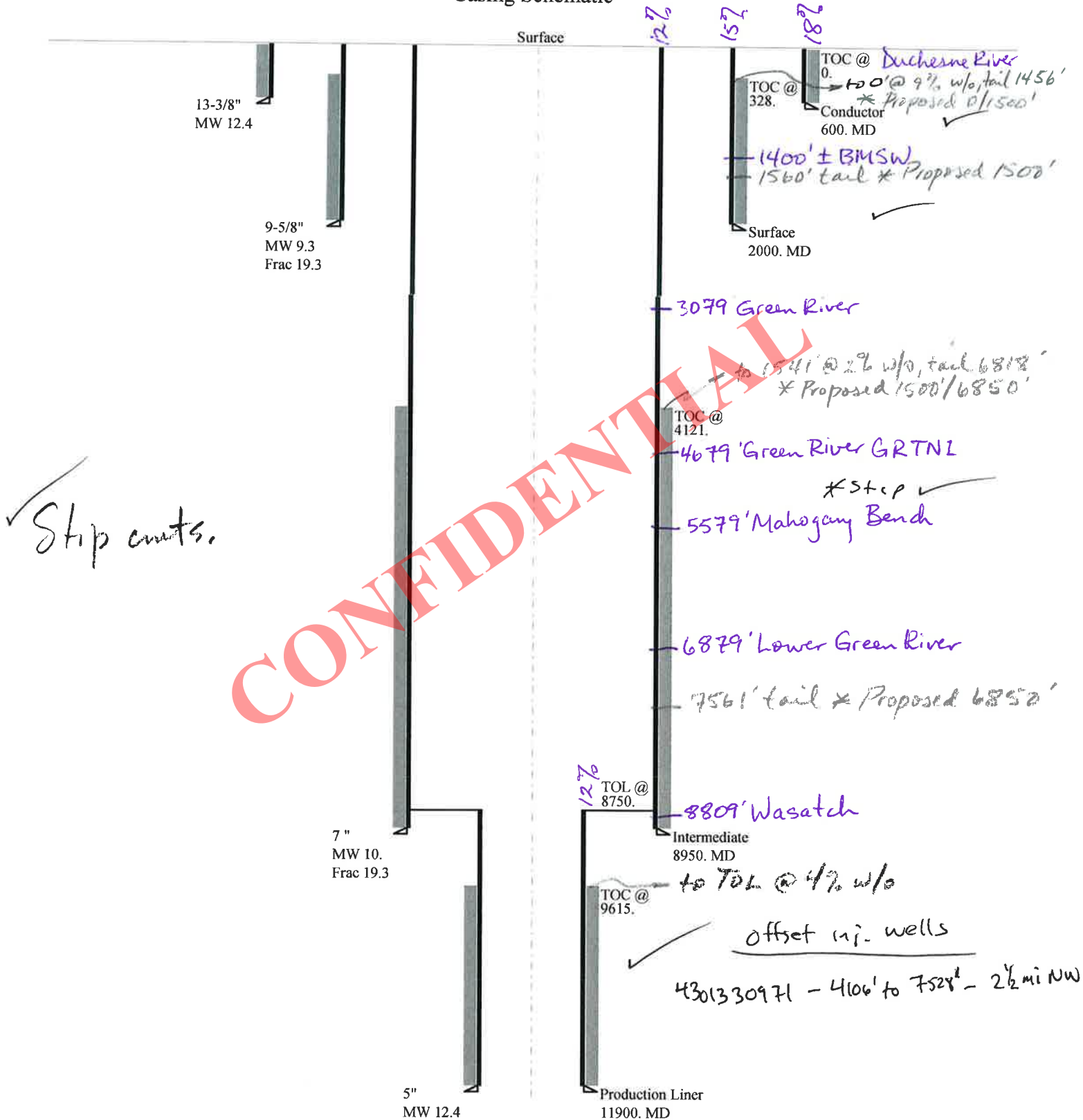
Calculations	Surf String	9.625	"
Max BHP (psi)	.052*Setting Depth*MW=	967	
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	727	YES 4.5 x 13 3/8 rotating head
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	527	YES OK
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	659	NO OK
Required Casing/BOPE Test Pressure=		2000	psi
*Max Pressure Allowed @ Previous Casing Shoe=		600	psi *Assumes 1psi/ft frac gradient

Calculations	I1 String	7.000	"
Max BHP (psi)	.052*Setting Depth*MW=	4654	
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	3580	YES 10M BOPE, annular preventer, dbl rams, blind rams, rotating
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	2685	YES head, drilling spool
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	3125	NO OK
Required Casing/BOPE Test Pressure=		7854	psi
*Max Pressure Allowed @ Previous Casing Shoe=		2000	psi *Assumes 1psi/ft frac gradient

Calculations	L1 String	5.000	"
Max BHP (psi)	.052*Setting Depth*MW=	7673	
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	6245	YES 10M BOPE, annular preventer, dbl rams, blind rams, rotating
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	5055	YES head, drilling spool
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	7024	YES OK
Required Casing/BOPE Test Pressure=		9758	psi
*Max Pressure Allowed @ Previous Casing Shoe=		8950	psi *Assumes 1psi/ft frac gradient

## 43013529020000 Anderson 2-21C4

## Casing Schematic





Well name:	<b>43013529020000 Anderson 2-21C4</b>	
Operator:	<b>EP ENERGY E&amp;P COMPANY, LP.</b>	
String type:	Conductor	Project ID: 43-013-52902
Location:	DUCHESNE COUNTY	

**Design parameters:****Collapse**

Mud weight: 12.400 ppg  
Design is based on evacuated pipe.

**Minimum design factors:****Collapse:**

Design factor 1.125

**Environment:**

H2S considered? No  
Surface temperature: 74 °F  
Bottom hole temperature: 82 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 1,000 ft

**Burst:**

Design factor 1.00

Cement top: Surface

**Burst**

Max anticipated surface pressure: 254 psi  
Internal gradient: 0.220 psi/ft  
Calculated BHP 386 psi

No backup mud specified.

**Tension:**

8 Round STC: 1.80 (J)  
8 Round LTC: 1.80 (J)  
Buttress: 1.60 (J)  
Premium: 1.50 (J)  
Body yield: 1.60 (B)

**Non-directional string.**

Tension is based on buoyed weight.  
Neutral point: 490 ft

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	600	13.375	54.50	J-55	ST&C	600	600	12.49	7445
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	386	1130	2.924	386	2730	7.06	26.7	514	19.25 J

Prepared Helen Sadik-Macdonald  
by: Div of Oil, Gas & Mining

Phone: 801 538-5357  
FAX: 801-359-3940

Date: June 2, 2014  
Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 600 ft, a mud weight of 12.4 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Well name:	<b>43013529020000 Anderson 2-21C4</b>	
Operator:	<b>EP ENERGY E&amp;P COMPANY, LP.</b>	
String type:	Surface	Project ID: 43-013-52902
Location:	DUCHESNE COUNTY	

**Design parameters:****Collapse**

Mud weight: 9.300 ppg  
Design is based on evacuated pipe.

**Minimum design factors:****Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Environment:**

H2S considered? No  
Surface temperature: 74 °F  
Bottom hole temperature: 102 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 100 ft

Cement top: 328 ft

**Burst**

Max anticipated surface pressure: 1,760 psi  
Internal gradient: 0.120 psi/ft  
Calculated BHP 2,000 psi

No backup mud specified.

**Tension:**

8 Round STC: 1.80 (J)  
8 Round LTC: 1.70 (J)  
Buttress: 1.60 (J)  
Premium: 1.50 (J)  
Body yield: 1.50 (B)

Tension is based on buoyed weight.  
Neutral point: 1,723 ft

**Non-directional string.****Re subsequent strings:**

Next setting depth: 8,950 ft  
Next mud weight: 10.000 ppg  
Next setting BHP: 4,649 psi  
Fracture mud wt: 19.250 ppg  
Fracture depth: 2,000 ft  
Injection pressure: 2,000 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	2000	9.625	40.00	N-80	LT&C	2000	2000	8.75	25450

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	966	3090	3.198	2000	5750	2.87	68.9	737	10.69 J

Prepared Helen Sadik-Macdonald  
by: Div of Oil, Gas & Mining

Phone: 801 538-5357  
FAX: 801-359-3940

Date: May 30, 2014  
Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 2000 ft, a mud weight of 9.3 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Well name:	<b>43013529020000 Anderson 2-21C4</b>	
Operator:	<b>EP ENERGY E&amp;P COMPANY, LP.</b>	
String type:	Intermediate	Project ID: 43-013-52902
Location:	DUCHESNE COUNTY	

**Design parameters:****Collapse**

Mud weight: 10.000 ppg  
Design is based on evacuated pipe.

**Minimum design factors:****Collapse:**

Design factor 1.125

**Environment:**

H2S considered? No  
Surface temperature: 74 °F  
Bottom hole temperature: 199 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 1,000 ft

**Burst:**

Design factor 1.00

Cement top: 4,121 ft

**Burst**

Max anticipated surface pressure: 5,047 psi  
Internal gradient: 0.220 psi/ft  
Calculated BHP 7,016 psi

No backup mud specified.

**Tension:**

8 Round STC: 1.80 (J)  
8 Round LTC: 1.80 (J)  
Buttress: 1.60 (J)  
Premium: 1.50 (J)  
Body yield: 1.60 (B)

**Non-directional string.**

Tension is based on buoyed weight.  
Neutral point: 7,595 ft

**Re subsequent strings:**

Next setting depth: 11,900 ft  
Next mud weight: 12.400 ppg  
Next setting BHP: 7,665 psi  
Fracture mud wt: 19.250 ppg  
Fracture depth: 8,950 ft  
Injection pressure: 8,950 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	8950	7	29.00	HCP-110	LT&C	8950	8950	6.059	101069
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	4649	9200	1.979	7016	11220	1.60	220.3	797	3.62 J

Prepared by: Helen Sadik-Macdonald  
Div of Oil, Gas & Mining

Phone: 801 538-5357  
FAX: 801-359-3940

Date: May 30, 2014  
Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 8950 ft, a mud weight of 10 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Well name:	<b>43013529020000 Anderson 2-21C4</b>	
Operator:	<b>EP ENERGY E&amp;P COMPANY, LP.</b>	
String type:	Production Liner	Project ID: 43-013-52902
Location:	DUCHESNE COUNTY	

**Design parameters:****Collapse**

Mud weight: 12.400 ppg  
Design is based on evacuated pipe.

**Minimum design factors:****Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Environment:**

H2S considered? No  
Surface temperature: 74 °F  
Bottom hole temperature: 241 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 1,000 ft

Cement top: 9,615 ft

**Burst**

Max anticipated surface pressure: 5,047 psi  
Internal gradient: 0.220 psi/ft  
Calculated BHP 7,665 psi

No backup mud specified.

**Tension:**

8 Round STC: 1.80 (J)  
8 Round LTC: 1.80 (J)  
Buttress: 1.60 (J)  
Premium: 1.50 (J)  
Body yield: 1.60 (B)

Tension is based on buoyed weight.  
Neutral point: 11,315 ft

Liner top: 8,750 ft

**Non-directional string.**

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	3100	5	18.00	HCP-110	ST-L	11900	11900	4.151	245520
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	7665	15360	2.004	7665	13940	1.82	45.3	341	7.53 J

Prepared Helen Sadik-Macdonald  
by: Div of Oil, Gas & Mining

Phone: 801-538-5357  
FAX: 801-359-3940

Date: May 30, 2014  
Salt Lake City, Utah

**Remarks:**

For this liner string, the top is rounded to the nearest 100 ft. Collapse is based on a vertical depth of 11900 ft, a mud weight of 12.4 ppg. The Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

*Engineering responsibility for use of this design will be that of the purchaser.*

# **ON-SITE PREDRILL EVALUATION**

## **Utah Division of Oil, Gas and Mining**

**Operator** EP ENERGY E&P COMPANY, L.P.  
**Well Name** Anderson 2-21C4  
**API Number** 43013529020000      **APD No** 9558    **Field/Unit** ALTAMONT  
**Location: 1/4,1/4** NWNW    **Sec** 21    **Tw** 3.0S    **Rng** 4.0W    860 FNL 1004 FWL  
**GPS Coord (UTM)** 555537 4451377      **Surface Owner** Lincoln Anderson

### **Participants**

Wayne Garner (EP Energy); Heather Ivie, Valery & Meagan (lands); Dennis Ingram (DOGM)

### **Regional/Local Setting & Topography**

The Anderson 2-21C4 well site has been proposed in northeastern Utah, approximately 3.54 miles north of Duchesne on US 87, then east along a county road for another 2.35 miles, then south for 0.19 miles into well site. Regionally this well pad sets at the southern end of Blue Bench some three miles north of the Duchesne River Valley; the Duchesne corridor is also found west of this site 3.5 miles where it runs south into Duchesne before turning east. To the north and east Blue Bench is open grasslands with sagebrush where undisturbed. The topography at the well site slopes gently to the southwest showing a three to five foot drop from the north side of the pad. Sagebrush and bunch grass at the surface, good covering.

### **Surface Use Plan**

#### **Current Surface Use**

Grazing  
Wildlife Habitat

#### **New Road Miles**

0.19

#### **Well Pad**

**Width** 357    **Length** 425

#### **Src Const Material**

Onsite

#### **Surface Formation**

UNTA

**Ancillary Facilities** Y

### **Waste Management Plan Adequate?**

### **Environmental Parameters**

**Affected Floodplains and/or Wetlands** N

#### **Flora / Fauna**

Sagebrush, rabbit brush, bunch grass, prickly pear cactus;

potential mule deer, coyote, rabbit prairie dog, field mice and other smaller mammals, hawk, eagle or owl potential but no roosting or perch opportunities for miles.

#### **Soil Type and Characteristics**

Reddish-brown fine grained blow sand

**Erosion Issues** N

**Sedimentation Issues** N



Site Stability Issues N

Drainage Diversion Required? N

Berm Required? Y

Erosion Sedimentation Control Required? N

Paleo Survey Run? N    Paleo Potential Observed? N    Cultural Survey Run? N    Cultural Resources? N

**Reserve Pit**

Site-Specific Factors		Site Ranking
Distance to Groundwater (feet)	>200	0
Distance to Surface Water (feet)	>1000	0
Dist. Nearest Municipal Well (ft)	>5280	0
Distance to Other Wells (feet)	>1320	0
Native Soil Type	High permeability	20
Fluid Type	Fresh Water	5
Drill Cuttings	Normal Rock	0
Annual Precipitation (inches)		0
Affected Populations		
Presence Nearby Utility Conduits	Not Present	0
Final Score		25    1 Sensitivity Level

**Characteristics / Requirements**

Proposed reserve pit along the northern side of location in cut, measuring 110' wide by 150' long by 12' deep.

Closed Loop Mud Required?    Liner Required? Y    Liner Thickness 20    Pit Underlayment Required?

**Other Observations / Comments**

Surface slopes to the southwest, five feet of cut and three feet of fill across location, sagebrush covering, not any drainage issues or housing nearby.

Dennis Ingram  
Evaluator

5/2/2014  
Date / Time

# Application for Permit to Drill

## Statement of Basis

### Utah Division of Oil, Gas and Mining

APD No	API WellNo	Status	Well Type	Surf Owner	CBM
9558	43013529020000	LOCKED	OW	P	No
Operator	EP ENERGY E&P COMPANY, L.P.		Surface Owner-APD	Lincoln Anderson	
Well Name	Anderson 2-21C4		Unit		
Field	ALTAMONT		Type of Work	DRILL	
Location	NWNW 21 3S 4W U 860 FNL	1004 FWL	GPS Coord		
	(UTM) 555538E 4451397N				

#### Geologic Statement of Basis

EP proposes to set 600 feet of conductor and 2,000 feet of surface casing both of which will be cemented to surface. The surface and intermediate holes will be drilled utilizing fresh water mud. The estimated depth to the base of moderately saline ground water is 1,400 feet. A search of Division of Water Rights records indicates that there are 8 water wells within a 10,000 foot radius of the center of Section 21. These wells probably produce water from near surface alluvium and the Duchesne River Formation. Depths of the wells fall in the range of 30-300 feet. The wells are listed as being used for irrigation, stock watering and domestic. The nearest water wells are nearly a mile north of the proposed well. The proposed drilling, casing and cement program should adequately protect the highly used Duchesne River aquifer.

Brad Hill  
APD Evaluator

5/8/2014  
Date / Time

#### Surface Statement of Basis

Surface at well site is open rangeland type habitat that slopes gently to the southwest and does not have any drainage issues. A reserve pit has been proposed by the operator immediately off the north side of the location, which is in cut and parallel to the wellbore from westerly winds. The operator shall install a 20 mil synthetic liner into a smooth pit bottom to prevent migration of drilling fluids into sandy soils. The location shall also be bermed to prevent drilling or production fluids from leaving the well site. There weren't any other issues noted or addressed at the presite meeting.

A presite investigation scheduled and performed on May 2, 2014 to take input and address issues regarding the construction and drilling of the Anderson 2-21C4. Surface disturbance will cover three different landowners, each of which were contacted by telephone and invited to the presite. EP Energy has submitted a signed landowner agreement for surface damage or use, having agreements with each of those landowners.

Dennis Ingram  
Onsite Evaluator

5/2/2014  
Date / Time

#### Conditions of Approval / Application for Permit to Drill

Category	Condition
Pits	A synthetic liner with a minimum thickness of 20 mils shall be properly installed and maintained in the reserve pit.
Pits	The reserve pit should be located on the north side of the location.
Surface	The well site shall be bermed to prevent fluids from entering or leaving the pad.

**CONFIDENTIAL**

## WORKSHEET APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 4/7/2014

API NO. ASSIGNED: 43013529020000

WELL NAME: Anderson 2-21C4

OPERATOR: EP ENERGY E&amp;P COMPANY, L.P. (N3850)

PHONE NUMBER: 713 997-5038

CONTACT: Maria S. Gomez

PROPOSED LOCATION: NWNW 21 030S 040W

Permit Tech Review: ☒

SURFACE: 0860 FNL 1004 FWL

Engineering Review: ☒

BOTTOM: 0860 FNL 1004 FWL

Geology Review: ☒

COUNTY: DUCHESNE

LATITUDE: 40.21115

LONGITUDE: -110.34735

UTM SURF EASTINGS: 555538.00

NORTHINGS: 4451397.00

FIELD NAME: ALTAMONT

LEASE TYPE: 4 - Fee

LEASE NUMBER: Fee

PROPOSED PRODUCING FORMATION(S): GREEN RIVER(LWR)-WASATCH

SURFACE OWNER: 4 - Fee

COALBED METHANE: NO

## RECEIVED AND/OR REVIEWED:

☒ PLAT☒ Bond: STATE/FEE - 400JU0708☐ Potash☐ Oil Shale 190-5☐ Oil Shale 190-3☐ Oil Shale 190-13☒ Water Permit: Duchesne City☐ RDCC Review:☒ Fee Surface Agreement☐ Intent to Commingle

Commingle Approved

## LOCATION AND SITING:

☐ R649-2-3.

Unit:

☐ R649-3-2. General☐ R649-3-3. Exception☒ Drilling Unit

Board Cause No: Cause 139-90

Effective Date: 5/9/2012

Siting: 4 Wells Per 640 Acres

☐ R649-3-11. Directional Drill

Comments: Presite Completed

Stipulations: 5 - Statement of Basis - bhll  
8 - Cement to Surface -- 2 strings - hmadonald  
12 - Cement Volume (3) - hmadonald

RECEIVED: June 04, 2014



GARY R. HERBERT  
*Governor*

SPENCER J. COX  
*Lieutenant Governor*

# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
*Executive Director*

### Division of Oil, Gas and Mining

JOHN R. BAZA  
*Division Director*

## Permit To Drill

\*\*\*\*\*

**Well Name:** Anderson 2-21C4  
**API Well Number:** 43013529020000  
**Lease Number:** Fee  
**Surface Owner:** FEE (PRIVATE)  
**Approval Date:** 6/4/2014

### Issued to:

EP ENERGY E&P COMPANY, L.P., 1001 Louisiana, Houston, TX 77002

### Authority:

Pursuant to Utah Code Ann. 40-6-1 et seq., and Utah Administrative Code R649-3-1 et seq., the Utah Division of Oil, Gas and Mining issues conditions of approval, and permit to drill the listed well. This permit is issued in accordance with the requirements of Cause 139-90. The expected producing formation or pool is the GREEN RIVER(LWR)-WASATCH Formation(s), completion into any other zones will require filing a Sundry Notice (Form 9). Completion and commingling of more than one pool will require approval in accordance with R649-3-22.

### Duration:

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date

### General:

Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

### Conditions of Approval:

Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis (copy attached).

Cement volumes for the 13 3/8" and 9 5/8" casing strings shall be determined from actual hole diameters in order to place cement from the pipe setting depths back to the surface.

Cement volume for the 7" intermediate string shall be determined from actual hole diameter in order to place lead cement from the pipe setting depth back to 1500' MD as indicated in the submitted drilling plan and tail cement to Mahogany Bench.

### Additional Approvals:

The operator is required to obtain approval from the Division of Oil, Gas and mining before performing any of the following actions during the drilling of this well:

- Any changes to the approved drilling plan - contact Dustin Doucet
- Significant plug back of the well - contact Dustin Doucet
- Plug and abandonment of the well - contact Dustin Doucet

### **Notification Requirements:**

The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:

- Within 24 hours following the spudding of the well - contact Carol Daniels  
OR  
submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website  
at <http://oilgas.ogm.utah.gov>
- 24 hours prior to testing blowout prevention equipment - contact Dan Jarvis
- 24 hours prior to cementing or testing casing - contact Dan Jarvis
- Within 24 hours of making any emergency changes to the approved drilling program  
- contact Dustin Doucet
- 24 hours prior to commencing operations to plug and abandon the well - contact Dan Jarvis

### **Contact Information:**

The following are Division of Oil, Gas and Mining contacts and their telephone numbers (please leave a voicemail message if the person is not available to take the call):

- Carol Daniels 801-538-5284 - office
- Dustin Doucet 801-538-5281 - office  
801-733-0983 - after office hours
- Dan Jarvis 801-538-5338 - office  
801-231-8956 - after office hours

### **Reporting Requirements:**

All reports, forms and submittals as required by the Utah Oil and Gas Conservation General Rules will be promptly filed with the Division of Oil, Gas and Mining, including but not limited to:

- Entity Action Form (Form 6) - due within 5 days of spudding the well
- Monthly Status Report (Form 9) - due by 5th day of the following calendar month
- Requests to Change Plans (Form 9) - due prior to implementation
- Written Notice of Emergency Changes (Form 9) - due within 5 days
- Notice of Operations Suspension or Resumption (Form 9) - due prior to implementation
- Report of Water Encountered (Form 7) - due within 30 days after completion
- Well Completion Report (Form 8) - due within 30 days after completion or plugging

Approved By:

**Approved By:**

A handwritten signature in black ink, appearing to read "J. Rogers", written over a faint horizontal line.

For John Rogers  
Associate Director, Oil & Gas

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		<b>FORM 9</b>
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> Fee
<b>1. TYPE OF WELL</b> Oil Well		<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>
<b>2. NAME OF OPERATOR:</b> EP ENERGY E&P COMPANY, L.P.		<b>7. UNIT or CA AGREEMENT NAME:</b>
<b>3. ADDRESS OF OPERATOR:</b> 1001 Louisiana, Houston, TX, 77002		<b>8. WELL NAME and NUMBER:</b> Anderson 2-21C4
<b>PHONE NUMBER:</b> 713 997-5038 Ext		<b>9. API NUMBER:</b> 43013529020000
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0860 FNL 1004 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNW Section: 21 Township: 03.0S Range: 04.0W Meridian: U		<b>9. FIELD and POOL or WILDCAT:</b> ALTAMONT
		<b>COUNTY:</b> DUCHESNE
		<b>STATE:</b> UTAH

11.

CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
<input checked="" type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start: <b>11/19/2014</b>	<input type="checkbox"/> ACIDIZE <input checked="" type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION
<input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:	<input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER
<input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION
<input type="checkbox"/> <b>DRILLING REPORT</b> Report Date:	OTHER: <input style="width: 100px;" type="text"/>

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

EP respectfully requests approval to eliminate the 13 3/8", preset 9 5/8" with the air rig, changed MW's, cement slurries, etc. Please see attached for details.

**Approved by the  
Utah Division of  
Oil, Gas and Mining**

**Date:** November 17, 2014

**By:** *Derek Dunt*

**Please Review Attached Conditions of Approval**

<b>NAME (PLEASE PRINT)</b> Maria S. Gomez	<b>PHONE NUMBER</b> 713 997-5038	<b>TITLE</b> Principal Regulatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 11/17/2014	





**The Utah Division of Oil, Gas, and Mining**

- State of Utah
- Department of Natural Resources

**Electronic Permitting System - Sundry Notices**

**Sundry Conditions of Approval Well Number 43013529020000**

**A properly lubricated and maintained rotating head shall be used during air drilling.**

**Anderson 2-21C4  
Sec. 21, T3S, R4W  
DUCHESNE COUNTY, UT**

**EP ENERGY E&P COMPANY, L.P.**

**DRILLING PROGRAM**

**1. Estimated Tops of Important Geologic Markers**

<u>Formation</u>	<u>Depth</u>
Green River (GRRV)	3,079' TVD
Green River (GRTN1)	4,679' TVD
Mahogany Bench	5,579' TVD
L. Green River	6,879' TVD
Wasatch	8,809' TVD
T.D. (Permit)	11,900' TVD

**2. Estimated Depths of Anticipated Water, Oil, Gas or Mineral Formations:**

<u>Substance</u>	<u>Formation</u>	<u>Depth</u>
	Green River (GRRV)	3,079' MD / TVD
	Green River (GRTN1)	4,679' MD / TVD
	Mahogany Bench	5,579' MD / TVD
Oil	L. Green River	6,879' MD / TVD
Oil	Wasatch	8,809' MD / TVD

**3. Pressure Control Equipment: (Schematic Attached)**

Diverter Stack from 40' MD/TVD to 2,000' MD/TVD on Conductor. A 10M BOP stack w/ rotating head, spacer spool, 5M annular, flex rams, blind rams & single w/ flex rams from 2,000' MD/TVD to 8,950' MD/TVD. A 10M BOP stack w/ rotating head, spacer spool, 5M annular, flex rams, blind rams & single w/ flex rams from 8,950' MD/TVD to TD (11,900' MD/TVD).

The BOPE and related equipment will meet the requirements of the 5M and 10M system.

**OPERATORS MINIMUM SPECIFICATIONS FOR BOPE:**

The surface casing will be equipped with a flanged casing head of 5M psi working pressure. An 11" 5M x 11" 10M spool, 11" x 10M psi BOP and 5M psi annular will be nipped up on the surface casing and tested to 250 psi low test / 3,000 psi high test for 10 minutes each prior to drilling out. The surface casing will be tested to 1,000 psi. for 30 mins. Intermediate casing will be tested to the greater of 1,500 psi or 0.22 psi/ft. The choke manifold equipment, upper Kelly

cock and floor safety valves will be tested to 5M psi. The annular preventer will be tested to 250 psi low test / 4,000 psi high test. The 10M BOP will be installed with rotating head, spacer spool, 5M annular, flex rams, blind rams & single w/ flex rams from surface shoe to TD. The BOPE will be hydraulically operated.

In addition, the BOP equipment will be tested after running intermediate casing, after any repairs to the equipment and at least once every 30 days. Pipe and blind rams will be activated on each trip, annular preventer will be activated weekly and weekly BOP drills will be held with each crew.

**Statement on Accumulator System and Location of Hydraulic Controls:**

Precision Rig # 406 is expected to be used to drill the proposed well. Operations will commence after approval of this application. Manual and/or hydraulic controls will be in compliance with 5M and 10M psi systems.

**Auxiliary Equipment:**

- A) Pason Gas Monitoring 2,000' - TD
- B) Mud logger with gas monitor – 2,000' to TD (11,900' MD/TVD)
- C) Choke manifold with one manual and one hydraulic operated choke
- D) Full opening floor valve with drill pipe thread
- E) Upper and lower Kelly cock
- F) Shaker, de-sander and centrifuge

**4. Proposed Casing & Cementing Program:**

Please refer to the attached Wellbore Diagram.

All casing will meet or exceed the following design safety factors:

- Burst = 1.00
- Collapse = 1.125
- Tension = 1.2 (including 100k# overpull)

Cement design calculations for intermediate and production hole will be based on minimum 10% excess over gauge hole volumes. Actual volumes pumped will be a minimum of 10% excess over caliper volume to designed tops of cement for any section logged. A minimum of 50% excess over gauge volume will be pumped on surface casing.

**5. Drilling Fluids Program:**

Proposed Mud Program:

Interval	Type	Mud Weight
Surface	Air	Air
Intermediate	WBM	9.2 – 10.2
Production	WBM	11.0 – 11.8

Anticipated mud weights are based on actual offset well bottom-hole pressure data. Mud weights utilized may be somewhat higher to allow for trip margin and to provide hole stability for running logs and casing.

Visual mud monitoring equipment will be utilized.

6. **Evaluation Program:**

Logs:

Mud Log: 2,000' MD/TVD – TD (11,900' MD/TVD)

Open Hole Logs: Gamma Ray, Neutron-Density, Resistivity, Sonic, from surface casing shoe to TD.

7. **Abnormal Conditions:**

Maximum anticipated bottomhole pressure calculated at 11,900' TVD equals approximately 7,302 psi. This is calculated based on a 0.6136 psi/ft gradient (11.8 ppg mud density at TD).

Maximum anticipated surface pressure equals approximately 4,684 psi (bottomhole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/ft).

Maximum anticipated surface pressure based on frac gradient at 7" casing shoe is 0.8 psi/ft at 8,950' TVD = 7,160 psi

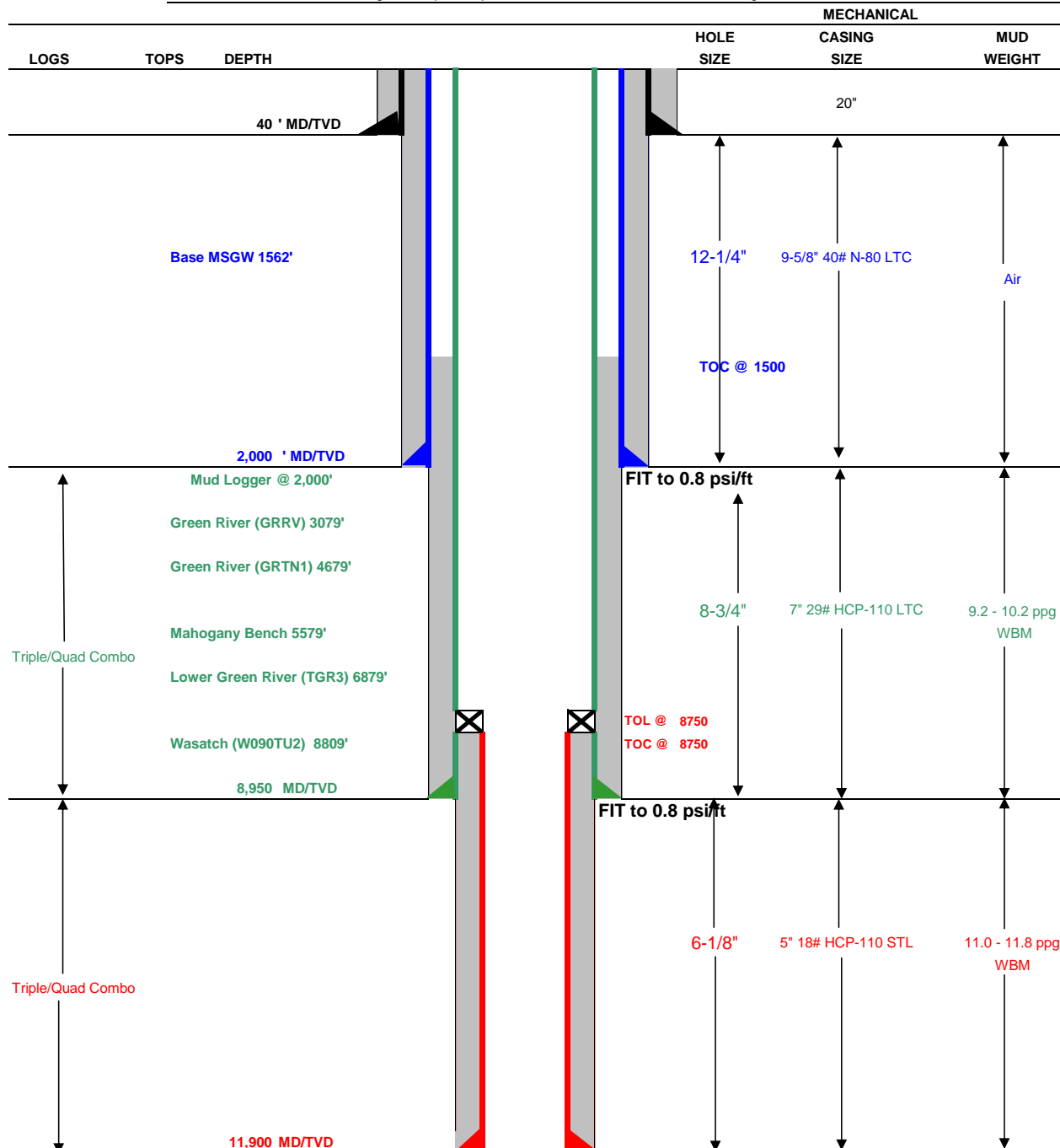
BOPE and casing design will be based on the lesser of the two MASPs which is 4,684 psi.

8. **OPERATOR REQUESTS THAT THE PROPOSED WELL BE PLACED ON CONFIDENTIAL STATUS.**



## Drilling Schematic

Company Name: <b>EP ENERGY</b>	Date: November 11, 2014
Well Name: <b>Anderson 2-21C4</b>	TD: 11,900
Field, County, State: <b>Altamont, Duchesne, Utah</b>	AFE #: TBD
Surface Location: <b>Sec 21 T3S R4W 860' FNL 1004' FWL</b>	BHL: Straight Hole
Objective Zone(s): <b>Green River, Wasatch</b>	Elevation: 5861.6
Rig: <b>Precision 406</b>	Spud (est.): TBD
BOPE Info: <b>Diverter System from 40' to 2,000' . 11 10M BOPE w/ rotating head &amp; 5M annular from 2,000' to 8,950' . 11 10M BOPE w/ rotating head, spacer spool, 5M annular, flex rams, blind rams, single w/ flex rams from 8,950' to TD</b>	



**DRILLING PROGRAM**

CASING PROGRAM	SIZE	INTERVAL		WT.	GR.	CPLG.	BURST	COLLAPSE	TENSION
SURFACE	9-5/8"	0	2000	40.00	N-80	LTC	5,750	3,090	737
INTERMEDIATE	7"	0	8950	29.00	HCP-110	LTC	11,220	9,750	797
PRODUCTION LINER	5"	8750	11900	18.00	HCP-110	STL	13,940	15,450	495

CEMENT PROGRAM		FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE	Lead	1,500	EXTENDACEM SYSTEM: Type V Cement + 20% Enhancer 923 + 2% Cal-Seal 60 + 0.35% Versaset + 0.3% D-Air 5000 + 6% Salt + 2.5% Econolite + 0.125 Poly-E-Flake	411	100%	12.0 ppg	2.37
	Tail	500	HALCEM SYSTEM: Class G Cement + 3 lbm/sk Silicalite Compacted + 1% Salt + 0.3% Econolite + 0.25 lbm/sk Poly-E-Flake + 0.25 lbm/sk Kwik Seal + 0.3% D-AIR 5000	195	50%	14.3 ppg	1.30
INTERMEDIATE	Lead	4,850	EXTENDACEM SYSTEM: Class G Cement + 6% Bentonite + 0.2% Econolite + 0.3% Versaset + 0.75% HR-5 + 0.3% Super CBL + 0.2% Halad-322 + 0.125 lb/sk Poly-E-Flake	487	30%	12.5 ppg	1.91
	Tail	2,600	EXPANDACEM SYSTEM: Class G Cement + 4% Bentonite + 0.25 Poly-E-Flake + 0.1% Halad-413 + 5 lb/sk Silicalite Compacted + 0.15% SA-1015 + 0.3% HR-5	315	30%	13.0 ppg	1.64
PRODUCTION LINER		3,150	EXTENDACEM SYSTEM: Class G Cement + 0.2% Super CBL + 0.55% SCR-100 + 0.3% Halad-413 + 0.125 lbm/sk Poly-E-Flake + 3 lbm/sk Silicalite Compacted + 20% SS-200 + 0.10% SA-1015	187	25%	14.2 ppg	1.47

FLOAT EQUIPMENT & CENTRALIZERS	
SURFACE	PDC drillable guide shoe, 1 joint casing, PDC drillable float collar. Thread lock all float equipment. Install bow spring centralizers on the bottom 3 joints of casing & every 3rd joint thereafter.
INTERMEDIATE	PDC drillable 10M,P-110 float shoe, 1 joint, PDC drillable 10M, P-110 float collar. Thread lock all float equipment. Maker joint at +/- 6,850'.
LINER	Float shoe, 1 joint, float collar, 1 joint, landing collar. Thread lock all FE. Maker joints every 1000'.

PROJECT ENGINEER(S): Brad MacAfee 713-997-6383

MANAGER: Bob Dodd

 Alexis Huefner <alexishuefner@utah.gov>

---

## Anderson 2-21C4 SPUD NOTICE

1 message

---

LANDRIG009 (Precision 406) <LANDRIG009@epenergy.com>

Mon, Nov 10, 2014 at 12:29 PM

To: "alexishuefner@utah.gov" <alexishuefner@utah.gov>, "MacAfee, Bradley D" <Brad.MacAfee@epenergy.com>, "caroldaniels@utah.gov" <caroldaniels@utah.gov>, "dennisingram@utah.gov" <dennisingram@utah.gov>, "Dodd, Robert W" <Robert.Dodd@epenergy.com>, "Morales, Lisa" <Lisa.Morales@epenergy.com>, "Mangum, Danny R (Contractor)" <danny.mangum@epenergy.com>, "Gomez, Maria S" <Maria.Gomez@epenergy.com>, "Derden, Roy Lynn (Contractor)" <Roy.Derden@epenergy.com>

### 24 Hr Notice of Spud

CONFIDENTIAL

**Well Name: Anderson 2-21C4**

**API Well Number: 43013529020000**

**Field: Altamont**

**County: Duchesne**

**Mineral Owner: Fee**

860 FNL 1004 FWL  
NWNW 21 3S 4W

**Leon Ross Drilling**

**Rig #35 Bucket Rig will be Spudded in on the above well for EP Energy LLC.**

Thanks,

Lloyd Rowell / Morgan Harden

EP Energy / PD 406

713-997-1220 (Rig)

435-823-1764 (Cell)

CONFIDENTIAL



Carol Daniels <caroldaniels@utah.gov>

NWNW S-21 T03S R04W FEE LEASE

## 24hr Notice Run & Cement Casing

1 message

LANDRIG009 (Precision 406) <LANDRIG009@epenergy.com>

Thu, Nov 20, 2014 at 8:02 AM

To: "alexishuefner@utah.gov" <alexishuefner@utah.gov>, "MacAfee, Bradley D" <Brad.MacAfee@epenergy.com>, "caroldaniels@utah.gov" <caroldaniels@utah.gov>, "dennisingram@utah.gov" <dennisingram@utah.gov>, "Dodd, Robert W" <Robert.Dodd@epenergy.com>, "Morales, Lisa" <Lisa.Morales@epenergy.com>, "Mangum, Danny R (Contractor)" <danny.mangum@epenergy.com>, "Gomez, Maria S" <Maria.Gomez@epenergy.com>, "DERDEN, ROY LYNN (Contractor)" <Roy.Derden@epenergy.com>

RE: EP ENERGY

ANDERSON 2-21C4

API # 43013529020000

ALTAMONT FIELD

DUCHESNE COUNTY

Leon Ross Drilling Rig 26 commenced drilling the 12¼" hole section @ 19:50hrs on 11/19/2014. We plan on running and cementing 9-5/8" Surface Casing to +/- 2,000' within 24hrs.

Regards,

Tony Wilkerson / Bill Owen

EP Energy LLC

PD Rig 406

Rig: 713-997-1220

Cell: 435-823-1764

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CONFIDENTIAL

Carol Daniels <caroldaniels@utah.gov>

*NW1/4 SEC 21 T23S R04W FEE LEASE*

## 24hr Notice Run & Cement liner

1 message

LANDRIG009 (Precision 406) <LANDRIG009@epenergy.com>

Sat, Feb 21, 2015 at 4:59 AM

To: "alexishuefner@utah.gov" <alexishuefner@utah.gov>, "MacAfee, Bradley D" <Brad.MacAfee@epenergy.com>, "caroldaniels@utah.gov" <caroldaniels@utah.gov>, "dennisingram@utah.gov" <dennisingram@utah.gov>, "Dodd, Robert W" <Robert.Dodd@epenergy.com>, "Mangum, Danny R (Contractor)" <danny.mangum@epenergy.com>, "Gomez, Maria S" <Maria.Gomez@epenergy.com>, "Derden, Roy Lynn (Contractor)" <Roy.Derden@epenergy.com>

RE: EP ENERGY

ANDERSON 2-21C4

API # 43013529020000

ALTAMONT FIELD

DUCHESNE COUNTY

We plan on running & cementing 5" 18# HCP-110 STL Production liner to +/- 11,506' within 24 hours.

Thanks,

Lloyd Rowell / Morgan Harden

EP Energy / PD 406

713-997-1220 (Rig)

435-823-1764 (Cell)

THIS E-MAIL AND ANY MATERIALS TRANSMITTED WITH IT MAY CONTAIN CONFIDENTIAL OR PROPRIETARY MATERIAL FOR THE SOLE USE OF THE INTENDED RECIPIENT. ANY REVIEW, USE, DISTRIBUTION OR DISCLOSURE BY OTHERS IS STRICTLY PROHIBITED. IF YOU ARE NOT THE INTENDED RECIPIENT, OR AUTHORIZED TO RECEIVE THE INFORMATION FROM THE RECIPIENT, PLEASE NOTIFY THE SENDER BY REPLY E-MAIL AND DELETE ALL COPIES OF THIS MESSAGE.

CONFIDENTIAL

Carol Daniels <caroldaniels@utah.gov>

*NW NW SEC 21 T03S R04W FEE LEASE*

## 24hr Notice Run & Cement Casing

1 message

**LANDRIG009 (Precision 406)** <LANDRIG009@epenergy.com>

Sun, Feb 15, 2015 at 12:30 PM

To: "alexishuefner@utah.gov" <alexishuefner@utah.gov>, "MacAfee, Bradley D" <Brad.MacAfee@epenergy.com>, "caroldaniels@utah.gov" <caroldaniels@utah.gov>, "dennisingram@utah.gov" <dennisingram@utah.gov>, "Dodd, Robert W" <Robert.Dodd@epenergy.com>, "Mangum, Danny R (Contractor)" <danny.mangum@epenergy.com>, "Gomez, Maria S" <Maria.Gomez@epenergy.com>, "Derden, Roy Lynn (Contractor)" <Roy.Derden@epenergy.com>

RE: EP ENERGY

ANDERSON 2-21C4

API # 43013529020000

ALTAMONT FIELD

DUCHESNE COUNTY

We plan on running & cementing 7" HCP-110 29# LTC Intermediate casing to +/- 8,900' within 24 hours.

Regards,

Tony Wilkerson / Bill Owen

EP Energy LLC

PD Rig 406

Rig: 713-997-1220

Cell: 435-823-1764

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THIS E-MAIL AND ANY MATERIALS TRANSMITTED WITH IT MAY CONTAIN CONFIDENTIAL OR PROPRIETARY MATERIAL FOR THE SOLE USE OF THE INTENDED RECIPIENT. ANY REVIEW, USE, DISTRIBUTION OR DISCLOSURE BY OTHERS IS STRICTLY PROHIBITED. IF YOU ARE NOT THE INTENDED RECIPIENT, OR AUTHORIZED TO RECEIVE THE INFORMATION FROM THE RECIPIENT, PLEASE NOTIFY THE SENDER BY REPLY E-MAIL AND DELETE ALL COPIES OF THIS MESSAGE.

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MININGAMENDED REPORT ☐ FORM 8  
(highlight changes)

5. LEASE DESIGNATION AND SERIAL NUMBER:

## WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☐ OTHER \_\_\_\_\_b. TYPE OF WORK: NEW WELL ☐ HORIZ. LATS. ☐ DEEP-EN ☐ RE-ENTRY ☐ DIFF. RESVR. ☐ OTHER \_\_\_\_\_

2. NAME OF OPERATOR:

3. ADDRESS OF OPERATOR:

CITY

STATE

ZIP

PHONE NUMBER:

4. LOCATION OF WELL (FOOTAGES)

AT SURFACE:

AT TOP PRODUCING INTERVAL REPORTED BELOW:

AT TOTAL DEPTH:

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT or CA AGREEMENT NAME

8. WELL NAME and NUMBER:

9. API NUMBER:

10 FIELD AND POOL, OR WILDCAT

11. QTR/QTR, SECTION, TOWNSHIP, RANGE,  
MERIDIAN:

12. COUNTY

13. STATE

UTAH

14. DATE SPUDDED:

15. DATE T.D. REACHED:

16. DATE COMPLETED:

ABANDONED ☐READY TO PRODUCE ☐

17. ELEVATIONS (DF, RKB, RT, GL):

18. TOTAL DEPTH: MD

TVD

19. PLUG BACK T.D.: MD

TVD

20. IF MULTIPLE COMPLETIONS, HOW MANY? \*

21. DEPTH BRIDGE MD

PLUG SET: TVD

22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each)

23.

WAS WELL CORED?

NO ☐YES ☐

(Submit analysis)

WAS DST RUN?

NO ☐YES ☐

(Submit report)

DIRECTIONAL SURVEY?

NO ☐YES ☐

(Submit copy)

## 24. CASING AND LINER RECORD (Report all strings set in well)

HOLE SIZE	SIZE/GRADE	WEIGHT (#/ft.)	TOP (MD)	BOTTOM (MD)	STAGE CEMENTER DEPTH	CEMENT TYPE & NO. OF SACKS	SLURRY VOLUME (BBL)	CEMENT TOP **	AMOUNT PULLED

## 25. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)

## 26. PRODUCING INTERVALS

FORMATION NAME	TOP (MD)	BOTTOM (MD)	TOP (TVD)	BOTTOM (TVD)
(A)				
(B)				
(C)				
(D)				

## 27. PERFORATION RECORD

INTERVAL (Top/Bot - MD)	SIZE	NO. HOLES	PERFORATION STATUS
			Open <input type="checkbox"/> Squeezed <input type="checkbox"/>
			Open <input type="checkbox"/> Squeezed <input type="checkbox"/>
			Open <input type="checkbox"/> Squeezed <input type="checkbox"/>
			Open <input type="checkbox"/> Squeezed <input type="checkbox"/>

## 28. ACID, FRACTURE, TREATMENT, CEMENT SQUEEZE, ETC. See attached for further information on #27 &amp; #28.

DEPTH INTERVAL	AMOUNT AND TYPE OF MATERIAL

29. ENCLOSED ATTACHMENTS: All logs are submitted to UDOGM by vendor.

☐ ELECTRICAL/MECHANICAL LOGS ☐ GEOLOGIC REPORT ☐ DST REPORT ☐ DIRECTIONAL SURVEY  
☐ SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION ☐ CORE ANALYSIS ☐ OTHER: \_\_\_\_\_

30. WELL STATUS:

**31. INITIAL PRODUCTION****INTERVAL A (As shown in item #26)**

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

**INTERVAL B (As shown in item #26)**

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

**INTERVAL C (As shown in item #26)**

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

**INTERVAL D (As shown in item #26)**

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

**32. DISPOSITION OF GAS (Sold, Used for Fuel, Vented, Etc.)****33. SUMMARY OF POROUS ZONES (Include Aquifers):**

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

**34. FORMATION (Log) MARKERS:**

Formation	Top (MD)	Bottom (MD)	Descriptions, Contents, etc.	Name	Top (Measured Depth)

**35. ADDITIONAL REMARKS (Include plugging procedure)**

**36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.**

NAME (PLEASE PRINT) \_\_\_\_\_ TITLE \_\_\_\_\_

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

This report must be submitted within 30 days of

- completing or plugging a new well
- drilling horizontal laterals from an existing well bore
- recompleting to a different producing formation
- reentering a previously plugged and abandoned well
- significantly deepening an existing well bore below the previous bottom-hole depth
- drilling hydrocarbon exploratory holes, such as core samples and stratigraphic tests

\* ITEM 20: Show the number of completions if production is measured separately from two or more formations.

\*\* ITEM 24: Cement Top – Show how reported top(s) of cement were determined (circulated (CIR), calculated (CAL), cement bond log (CBL), temperature survey (TS)).

Send to: Utah Division of Oil, Gas and Mining  
1594 West North Temple, Suite 1210  
Box 145801  
Salt Lake City, Utah 84114-5801

Phone: 801-538-5340

Fax: 801-359-3940

**Attachment to Well Completion Report****Form 8 Dated April 17, 2015****Well Name: Anderson 2-21C4****Items #27 and #28 Continued****27. Perforation Record**

<b>Interval (Top/Bottom – MD)</b>	<b>Size</b>	<b>No. of Holes</b>	<b>Perf. Status</b>
<b>9744'-9964'</b>	<b>.43</b>	<b>60</b>	<b>Open</b>
<b>9446'-9710'</b>	<b>.43</b>	<b>69</b>	<b>Open</b>
<b>9163'-9419'</b>	<b>.43</b>	<b>69</b>	<b>Open</b>
<b>8947'-9132'</b>	<b>.43</b>	<b>63</b>	<b>Open</b>

**28. Acid, Fracture, Treatment, Cement Squeeze, Etc.**

<b>Depth Interval</b>	<b>Amount and Type of Material</b>
<b>9995'-10249'</b>	<b>5000 gal acid, 3030# 100 mesh, 150560# 30/50 TLC</b>
<b>9744'-9964'</b>	<b>5000 gal acid, 3000# 100 mesh, 150560# 30/50 TLC</b>
<b>9446'-9710'</b>	<b>5000 gal acid, 3000# 100 mesh, 150980# 30/50 TLC</b>
<b>9163'-9419'</b>	<b>5000 gal acid, 3000# 100 mesh, 151800# 30/50 TLC</b>
<b>8947'-9132'</b>	<b>5000 gal acid, 3000# 100 mesh, 152000# 30/50 TLC</b>



**Company:** EP Energy  
**Well:** Anderson 2-21C4  
**Location:** Duchesne, UT  
**Rig:** Precision 406

**Job Number:** \_\_\_\_\_  
**Mag Decl.:** \_\_\_\_\_  
**Dir Driller:** \_\_\_\_\_  
**MWD Eng:** \_\_\_\_\_

**Calculation Method** Minimum Curvature  
**Proposed Azimuth** 0.00  
**Depth Reference** KB  
**Tie Into:** Gyro/MWD

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')		
							N/S (ft)	E/W (ft)	Distance (ft)	Direction Azimuth					
Tie In	0.00	0.00	0.00												
1	100.00	0.26	61.14	100.00	100.00	0.11	0.11	N	0.20	E	0.23	61.14	0.26	61.14	
2	200.00	0.16	88.29	100.00	200.00	0.22	0.22	N	0.54	E	0.58	67.37	0.14	-0.10	27.15
3	300.00	0.11	8.06	100.00	300.00	0.32	0.32	N	0.69	E	0.76	65.02	0.18	-0.05	-80.23
4	400.00	0.24	232.83	100.00	400.00	0.29	0.29	N	0.53	E	0.61	61.76	0.32	0.13	224.76
5	500.00	0.51	180.73	100.00	500.00	-0.28	0.28	S	0.36	E	0.46	127.97	0.41	0.27	-52.10
6	600.00	0.44	172.67	100.00	599.99	-1.10	1.10	S	0.41	E	1.18	159.83	0.10	-0.07	-8.06
7	700.00	0.22	229.65	100.00	699.99	-1.60	1.60	S	0.31	E	1.63	169.01	0.37	-0.22	56.99
8	800.00	0.63	213.26	100.00	799.99	-2.18	2.18	S	0.14	W	2.19	183.54	0.43	0.42	-16.39
9	900.00	0.60	207.06	100.00	899.98	-3.11	3.11	S	0.68	W	3.18	192.24	0.08	-0.04	-6.21
10	1000.00	0.43	200.25	100.00	999.98	-3.93	3.93	S	1.04	W	4.06	194.86	0.18	-0.17	-6.81
11	1100.00	0.51	228.19	100.00	1099.98	-4.57	4.57	S	1.50	W	4.81	198.18	0.24	0.08	27.94
12	1200.00	0.80	191.40	100.00	1199.97	-5.55	5.55	S	1.97	W	5.89	199.54	0.50	0.29	-36.79
13	1300.00	0.63	178.61	100.00	1299.96	-6.78	6.78	S	2.09	W	7.09	197.16	0.23	-0.17	-12.79
14	1400.00	0.68	204.50	100.00	1399.96	-7.86	7.86	S	2.33	W	8.20	196.48	0.30	0.06	25.89
15	1500.00	0.97	192.20	100.00	1499.94	-9.23	9.23	S	2.75	W	9.64	196.60	0.34	0.29	-12.29
16	1600.00	0.92	174.44	100.00	1599.93	-10.86	10.86	S	2.85	W	11.23	194.72	0.30	-0.05	-17.76
17	1700.00	0.70	184.37	100.00	1699.92	-12.27	12.27	S	2.82	W	12.59	192.95	0.26	-0.23	9.93
18	1800.00	0.94	188.25	100.00	1799.91	-13.68	13.68	S	2.99	W	14.01	192.31	0.24	0.24	3.87
19	1900.00	0.89	179.35	100.00	1899.90	-15.27	15.27	S	3.09	W	15.58	191.45	0.15	-0.04	-8.90
20	1937.00	0.80	180.09	37.00	1936.89	-15.82	15.82	S	3.09	W	16.12	191.06	0.26	-0.26	2.00
21	2093.00	0.60	208.00	156.00	2092.88	-17.63	17.63	S	3.48	W	17.96	191.16	0.25	-0.13	17.89
22	2190.00	0.90	15.90	97.00	2189.88	-17.34	17.34	S	3.51	W	17.69	191.43	1.54	0.31	-198.04
23	2286.00	2.20	36.20	96.00	2285.84	-15.13	15.13	S	2.21	W	15.29	188.31	1.45	1.35	21.15
24	2382.00	3.40	25.70	96.00	2381.73	-11.08	11.08	S	0.11	E	11.08	179.42	1.35	1.25	-10.94
25	2478.00	3.10	20.50	96.00	2477.57	-6.08	6.08	S	2.26	E	6.49	159.65	0.44	-0.31	-5.42
26	2574.00	3.30	7.40	96.00	2573.42	-0.91	0.91	S	3.52	E	3.64	104.47	0.79	0.21	-13.65
27	2670.00	2.80	0.30	96.00	2669.29	4.18	4.18	N	3.89	E	5.71	42.96	0.65	-0.52	-7.40
28	2767.00	3.30	5.70	97.00	2766.15	9.32	9.32	N	4.18	E	10.22	24.14	0.59	0.52	5.57
29	2863.00	2.70	1.10	96.00	2862.02	14.33	14.33	N	4.50	E	15.02	17.42	0.67	-0.63	-4.79
30	2958.00	3.30	5.60	95.00	2956.89	19.29	19.29	N	4.81	E	19.88	13.99	0.68	0.63	4.74
31	3054.00	2.50	5.30	96.00	3052.77	24.13	24.13	N	5.27	E	24.70	12.32	0.83	-0.83	-0.31
32	3150.00	3.10	3.00	96.00	3148.65	28.80	28.80	N	5.60	E	29.34	11.00	0.64	0.63	-2.40
33	3247.00	3.90	350.90	97.00	3245.47	34.68	34.68	N	5.21	E	35.07	8.55	1.12	0.82	358.66
34	3342.00	3.00	341.60	95.00	3340.30	40.23	40.23	N	3.92	E	40.42	5.56	1.11	-0.95	-9.79
35	3439.00	3.20	355.50	97.00	3437.16	45.34	45.34	N	2.90	E	45.43	3.67	0.80	0.21	14.33



**Company:** EP Energy  
**Well:** Anderson 2-21C4  
**Location:** Duchesne, UT  
**Rig:** Precision 406

**Job Number:** \_\_\_\_\_  
**Mag Decl.:** \_\_\_\_\_  
**Dir Driller:** \_\_\_\_\_  
**MWD Eng:** \_\_\_\_\_

**Calculation Method** Minimum Curvature  
**Proposed Azimuth** 0.00  
**Depth Reference** KB  
**Tie Into:** Gyro/MWD

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')		
							N/S (ft)	E/W (ft)	Distance (ft)	Direction Azimuth					
36	3535.00	3.80	4.60	96.00	3532.98	51.18	51.18	N	2.95	E	51.26	3.30	0.85	0.63	-365.52
37	3631.00	2.90	354.60	96.00	3628.81	56.77	56.77	N	2.98	E	56.85	3.00	1.11	-0.94	364.58
38	3727.00	2.70	357.50	96.00	3724.70	61.44	61.44	N	2.65	E	61.50	2.47	0.26	-0.21	3.02
39	3823.00	3.10	352.10	96.00	3820.58	66.27	66.27	N	2.19	E	66.31	1.90	0.50	0.42	-5.62
40	3919.00	3.00	357.60	96.00	3916.44	71.36	71.36	N	1.73	E	71.38	1.39	0.32	-0.10	5.73
41	4016.00	3.90	14.70	97.00	4013.27	77.08	77.08	N	2.46	E	77.12	1.83	1.40	0.93	-353.51
42	4112.00	2.70	17.40	96.00	4109.11	82.40	82.40	N	3.97	E	82.49	2.76	1.26	-1.25	2.81
43	4208.00	2.70	25.10	96.00	4205.00	86.60	86.60	N	5.60	E	86.79	3.70	0.38	0.00	8.02
44	4305.00	3.20	13.50	97.00	4301.87	91.31	91.31	N	7.20	E	91.59	4.51	0.80	0.52	-11.96
45	4401.00	2.90	27.80	96.00	4397.74	96.06	96.06	N	8.96	E	96.48	5.33	0.85	-0.31	14.90
46	4497.00	3.30	32.80	96.00	4493.60	100.53	100.53	N	11.59	E	101.20	6.58	0.50	0.42	5.21
47	4593.00	3.10	4.00	96.00	4589.45	105.44	105.44	N	13.27	E	106.27	7.17	1.67	-0.21	-30.00
48	4688.00	3.00	12.00	95.00	4684.32	110.44	110.44	N	13.96	E	111.32	7.21	0.46	-0.11	8.42
49	4784.00	3.70	6.50	96.00	4780.15	115.97	115.97	N	14.84	E	116.92	7.29	0.80	0.73	-5.73
50	4881.00	1.90	354.60	97.00	4877.03	120.68	120.68	N	15.04	E	121.62	7.10	1.94	-1.86	358.87
51	4975.00	3.30	4.10	94.00	4970.94	124.93	124.93	N	15.09	E	125.84	6.89	1.55	1.49	-372.87
52	5071.00	2.50	353.50	96.00	5066.81	129.77	129.77	N	15.05	E	130.64	6.61	1.00	-0.83	363.96
53	5167.00	3.80	356.90	96.00	5162.67	135.03	135.03	N	14.64	E	135.82	6.19	1.37	1.35	3.54
54	5263.00	3.50	347.20	96.00	5258.47	141.06	141.06	N	13.82	E	141.74	5.59	0.71	-0.31	-10.10
55	5360.00	2.40	338.60	97.00	5355.34	145.84	145.84	N	12.42	E	146.37	4.87	1.22	-1.13	-8.87
56	5456.00	2.30	326.40	96.00	5451.26	149.31	149.31	N	10.62	E	149.69	4.07	0.53	-0.10	-12.71
57	5553.00	1.40	307.50	97.00	5548.21	151.66	151.66	N	8.60	E	151.90	3.25	1.11	-0.93	-19.48
58	5648.00	1.50	353.00	95.00	5643.18	153.60	153.60	N	7.53	E	153.78	2.81	1.18	0.11	47.89
59	5744.00	0.90	328.80	96.00	5739.16	155.49	155.49	N	6.99	E	155.65	2.57	0.81	-0.63	-25.21
60	5841.00	1.10	358.90	97.00	5836.15	157.07	157.07	N	6.58	E	157.21	2.40	0.57	0.21	31.03
61	5937.00	0.40	291.20	96.00	5932.14	158.11	158.11	N	6.25	E	158.24	2.26	1.06	-0.73	-70.52
62	6034.00	0.50	243.30	97.00	6029.14	158.05	158.05	N	5.55	E	158.14	2.01	0.39	0.10	-49.38
63	6129.00	0.60	199.80	95.00	6124.13	157.39	157.39	N	5.01	E	157.47	1.82	0.44	0.11	-45.79
64	6225.00	1.10	209.20	96.00	6220.12	156.12	156.12	N	4.39	E	156.18	1.61	0.54	0.52	9.79
65	6321.00	1.20	194.20	96.00	6316.10	154.34	154.34	N	3.70	E	154.38	1.37	0.33	0.10	-15.63
66	6418.00	1.30	200.30	97.00	6413.08	152.32	152.32	N	3.07	E	152.35	1.15	0.17	0.10	6.29
67	6514.00	1.90	196.00	96.00	6509.04	149.77	149.77	N	2.25	E	149.79	0.86	0.64	0.63	-4.48
68	6610.00	2.10	203.20	96.00	6604.99	146.62	146.62	N	1.12	E	146.63	0.44	0.33	0.21	7.50
69	6706.00	2.10	197.30	96.00	6700.92	143.33	143.33	N	0.10	W	143.33	359.96	0.23	0.00	-6.15
70	6802.00	2.50	198.20	96.00	6796.84	139.66	139.66	N	1.28	W	139.66	359.48	0.42	0.42	0.94
71	6897.00	2.90	191.00	95.00	6891.74	135.33	135.33	N	2.38	W	135.35	358.99	0.55	0.42	-7.58
72	6993.00	2.50	190.90	96.00	6987.63	130.89	130.89	N	3.24	W	130.93	358.58	0.42	-0.42	-0.10





Company: EP Energy  
Well: Anderson 2-21C4  
Location: Duchesne, UT  
Rig: Precision 406

Job Number: \_\_\_\_\_  
Mag Decl.: \_\_\_\_\_  
Dir Driller: \_\_\_\_\_  
MWD Eng: \_\_\_\_\_

Calculation Method Minimum Curvature  
Proposed Azimuth 0.00  
Depth Reference KB  
Tie Into: Gyro/MWD

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates				Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)		E/W (ft)		Distance (ft)	Direction Azimuth			
73	7089.00	2.90	184.30	96.00	7083.52	126.41	126.41	N	3.82	W	126.47	358.27	0.53	0.42	-6.87
74	7186.00	2.10	199.20	97.00	7180.43	122.29	122.29	N	4.59	W	122.37	357.85	1.06	-0.82	15.36
75	7282.00	2.60	202.90	96.00	7276.35	118.62	118.62	N	6.01	W	118.77	357.10	0.54	0.52	3.85
76	7378.00	2.80	190.40	96.00	7372.25	114.31	114.31	N	7.28	W	114.54	356.35	0.65	0.21	-13.02
77	7474.00	2.90	173.00	96.00	7468.13	109.59	109.59	N	7.41	W	109.84	356.13	0.90	0.10	-18.13
78	7569.00	2.30	167.80	95.00	7563.03	105.34	105.34	N	6.71	W	105.56	356.35	0.68	-0.63	-5.47
79	7665.00	2.00	176.50	96.00	7658.96	101.79	101.79	N	6.21	W	101.98	356.51	0.46	-0.31	9.06
80	7760.00	2.20	194.50	95.00	7753.90	98.37	98.37	N	6.56	W	98.59	356.18	0.72	0.21	18.95
81	7856.00	2.50	185.90	96.00	7849.82	94.50	94.50	N	7.24	W	94.78	355.62	0.48	0.31	-8.96
82	7951.00	2.50	186.20	95.00	7944.73	90.38	90.38	N	7.67	W	90.71	355.15	0.01	0.00	0.32
83	8047.00	2.40	181.80	96.00	8040.64	86.29	86.29	N	7.96	W	86.66	354.73	0.22	-0.10	-4.58
84	8143.00	2.50	179.90	96.00	8136.55	82.19	82.19	N	8.02	W	82.58	354.42	0.13	0.10	-1.98
85	8239.00	3.00	180.50	96.00	8232.44	77.58	77.58	N	8.04	W	78.00	354.08	0.52	0.52	0.62
86	8336.00	2.00	168.40	97.00	8329.35	73.39	73.39	N	7.72	W	73.79	353.99	1.16	-1.03	-12.47
87	8431.00	2.80	162.80	95.00	8424.27	69.55	69.55	N	6.70	W	69.87	354.49	0.88	0.84	-5.89
88	8527.00	0.30	204.30	96.00	8520.22	67.08	67.08	N	6.11	W	67.35	354.79	2.69	-2.60	43.23
89	8623.00	0.80	173.50	96.00	8616.22	66.18	66.18	N	6.14	W	66.47	354.70	0.59	0.52	-32.08
90	8719.00	2.50	199.20	96.00	8712.18	63.54	63.54	N	6.75	W	63.90	353.93	1.89	1.77	26.77
91	8816.00	2.10	207.30	97.00	8809.10	59.96	59.96	N	8.26	W	60.53	352.15	0.53	-0.41	8.35
92	8858.00	2.10	213.40	42.00	8851.07	58.63	58.63	N	9.04	W	59.33	351.23	0.53	0.00	14.52
93	9000.00	2.18	203.37	142.00	8992.97	53.98	53.98	N	11.54	W	55.20	347.93	0.27	0.06	-7.06
94	9100.00	2.47	201.16	100.00	9092.89	50.23	50.23	N	13.07	W	51.91	345.41	0.30	0.29	-2.21
95	9200.00	2.86	196.76	100.00	9192.78	45.84	45.84	N	14.57	W	48.10	342.37	0.44	0.39	-4.40
96	9300.00	2.88	192.12	100.00	9292.66	41.00	41.00	N	15.82	W	43.94	338.90	0.23	0.03	-4.63
97	9400.00	2.70	192.35	100.00	9392.54	36.23	36.23	N	16.85	W	39.96	335.06	0.18	-0.18	0.23
98	9500.00	2.75	194.14	100.00	9492.43	31.60	31.60	N	17.94	W	36.34	330.42	0.10	0.05	1.80
99	9600.00	2.68	190.72	100.00	9592.31	26.97	26.97	N	18.96	W	32.97	324.89	0.18	-0.07	-3.43
100	9700.00	2.77	191.40	100.00	9692.20	22.31	22.31	N	19.87	W	29.88	318.30	0.09	0.08	0.68
101	9800.00	3.06	187.00	100.00	9792.07	17.29	17.29	N	20.68	W	26.95	309.91	0.37	0.29	-4.40
102	9900.00	3.00	188.29	100.00	9891.93	12.06	12.06	N	21.38	W	24.54	299.43	0.09	-0.06	1.29
103	10000.00	2.98	191.36	100.00	9991.80	6.93	6.93	N	22.26	W	23.32	287.29	0.16	-0.02	3.08
104	10100.00	3.61	187.69	100.00	10091.63	1.26	1.26	N	23.20	W	23.23	273.12	0.67	0.64	-3.68
105	10200.00	3.36	184.57	100.00	10191.44	-4.78	4.78	S	23.85	W	24.33	258.68	0.32	-0.26	-3.11
106	10300.00	3.33	185.33	100.00	10291.27	-10.58	10.58	S	24.35	W	26.56	246.51	0.05	-0.03	0.75
107	10400.00	3.30	185.73	100.00	10391.11	-16.34	16.34	S	24.91	W	29.79	236.74	0.04	-0.03	0.40
108	10500.00	3.09	184.32	100.00	10490.95	-21.89	21.89	S	25.40	W	33.53	229.25	0.22	-0.20	-1.42
109	10600.00	3.10	177.84	100.00	10590.81	-27.28	27.28	S	25.50	W	37.35	223.07	0.35	0.01	-6.48



**Company:** EP Energy  
**Well:** Anderson 2-21C4  
**Location:** Duchesne, UT  
**Rig:** Precision 406

**Job Number:** \_\_\_\_\_  
**Mag Decl.:** \_\_\_\_\_  
**Dir Driller:** \_\_\_\_\_  
**MWD Eng:** \_\_\_\_\_

**Calculation Method** Minimum Curvature  
**Proposed Azimuth** 0.00  
**Depth Reference** KB  
**Tie Into:** Gyro/MWD

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure Distance (ft)	Direction Azimuth	Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)					
110	10700.00	2.83	171.60	100.00	10690.67	-32.43	32.43	S 25.04 W	40.97	217.67	0.42	-0.27	-6.23
111	10800.00	3.15	177.19	100.00	10790.54	-37.62	37.62	S 24.54 W	44.91	213.13	0.43	0.31	5.59
112	10900.00	3.08	179.41	100.00	10890.39	-43.04	43.04	S 24.38 W	49.47	209.53	0.14	-0.07	2.22
113	11000.00	3.03	177.13	100.00	10990.25	-48.36	48.36	S 24.22 W	54.09	206.60	0.13	-0.05	-2.28
114	11100.00	2.92	177.90	100.00	11090.11	-53.54	53.54	S 24.00 W	58.67	204.14	0.12	-0.11	0.77
115	11200.00	2.95	180.68	100.00	11189.98	-58.66	58.66	S 23.94 W	63.35	202.20	0.15	0.04	2.78
116	11300.00	3.13	184.38	100.00	11289.84	-63.96	63.96	S 24.18 W	68.38	200.71	0.27	0.18	3.70
117	11334.00	3.09	182.82	34.00	11323.79	-65.80	65.80	S 24.29 W	70.14	200.26	0.28	-0.13	-4.59
118	11506.00	3.09	182.82	172.00	11495.54	-75.05	75.05	S 24.75 W	79.03	198.25	0.00	0.00	0.00

## CENTRAL DIVISION

ALTAMONT FIELD  
ANDERSON 2-21C4  
ANDERSON 2-21C4  
DRILLING LAND

### Operation Summary Report

Disclaimer: Although the information contained in this report is based on sound engineering practices, the copyright owner(s) does (do) not accept any responsibility whatsoever, in negligence or otherwise, for any loss or damage arising from the possession or use of the report whether in terms of correctness or otherwise. The application, therefore, by the user of this report or any part thereof, is solely at the user's own risk.

## 1 General

### 1.1 Customer Information

Company	CENTRAL DIVISION
Representative	
Address	

### 1.2 Well Information

Well	ANDERSON 2-21C4		
Project	ALTAMONT FIELD	Site	ANDERSON 2-21C4
Rig Name/No.	PRECISION DRILLING/406	Event	DRILLING LAND
Start date	2/11/2015	End date	2/24/2015
Spud Date/Time	2/11/2015	UWI	ANDERSON 2-21C4
Active datum	KB @5,878.6ft (above Mean Sea Level)		
Afe No./Description	160118/53326 / ANDERSON 2-21C4		

## 2 Summary

### 2.1 Operation Summary

Date	Time Start-End	Duration (hr)	Phase	Activity	Sub	OP Code	MD from (ft)	Operation
11/21/2014	6:00 18:00	12.00	CASCOND	24		P	0.0	SET 57' 20" CONDUCTOR, SET MOUSE HOLE @ 80'. ADDED RKB CORRECTION FOR PD 406.
	18:00 6:00	12.00	CASSURF	24		P	57.0	DRILL 12 1/4" HOLE TO 2,057'. RAN & CMT 2,034' 9-5/8" 40# N-80 LT&C. FC @ 1,990' SHOE 2,034'. ADDED RKB CORRECTION FOR PD 406.
2/10/2015	6:00 6:00	24.00	MIRU	01		P	2,057.0	MOVE IN & RIG UP. 100% MOVED IN 80% RIGGED UP. RELEASED TRUCKS @ 17:00 HRS 2/9/15.
2/11/2015	6:00 15:30	9.50	MIRU	01		P	2,057.0	RU FLOOR, PU TDU. INSTALL SAVER SUB. INSTALL GAS BUSTER LINES. RAN STEAM LINES. PERFORM RIG INSPECTION. RIG ON RATE @ 15:30 HRS 2/20/15
	15:30 1:00	9.50	CASSURF	28		P	2,057.0	NU 11" 10M BOPE.
	1:00 5:00	4.00	CASSURF	19		P	2,057.0	PJSM WITH WEATHERFORD. TESTED 11" 5M ANNULAR TO 250 / 2,500 PSI AND REMAINING BOPE, FLOOR VALVES, ETC TO 250 / 5,000 PSI. TESTED CHOKE MANIFOLD TO 250 / 10,000 PSI. HELD EACH TEST 10 MINUTES. INSTALL WEAR BUSHING.
	5:00 6:00	1.00	CASSURF	31		P	2,057.0	TEST CASING TO 2,500 PSI FOR 30 MINUTES. TEST GOOD.
2/12/2015	6:00 15:00	9.00	CASSURF	14		P	2,057.0	PU 8 3/4" BHA & TIH TO 1,980'. SURFACE TEST MWD.
	15:00 16:00	1.00	CASSURF	32		P	2,057.0	DRILL OUT CMT, FE & 10'.
	16:00 16:30	0.50	CASSURF	33		P	2,067.0	CBU & PERFORM FIT TO 15.4 EMW WITH 9.8 PPG MUD @ 600 PSI.
	16:30 2:00	9.50	DRLINT1	08		P	2,067.0	DRILLED 2,067' - 3,191'. SPUD @ 16:30 2/11/15.
	2:00 2:30	0.50	DRLINT1	12		P	3,191.0	SERVICE RIG & TDU.
2/13/2015	2:30 6:00	3.50	DRLINT1	07		P	3,191.0	DRILLED 3,191' - 3,577'.
	6:00 12:00	6.00	DRLINT1	07		P	3,577.0	DRILLED 3,577' - 4,443'.
	12:00 12:30	0.50	DRLINT1	12		P	4,443.0	SERVICED RIG & TDU.
	12:30 1:30	13.00	DRLINT1	07		P	4,443.0	DRILLED 4,443' - 5,978'.
	1:30 2:00	0.50	DRLINT1	12		P	5,978.0	SERVICED RIG & TDU.
	2:00 6:00	4.00	DRLINT1	07		P	5,978.0	DRILLED 5,978' - 6,267'.
	6:00 12:30	6.50	DRLINT1	07		P	6,267.0	DRILLED 6,267' - 6,843'.
2/14/2015	12:30 13:00	0.50	DRLINT1	12		P	6,843.0	SERVICED RIG & TDU.
	13:00 2:00	13.00	DRLINT1	07		P	6,843.0	DRILLED 6,843' - 7,607'.
	2:00 2:30	0.50	DRLINT1	12		P	7,607.0	SERVICED RIG & TDU.
	2:30 6:00	3.50	DRLINT1	07		P	7,607.0	DRILLED 7,607' - 7,930'.

## 2.1 Operation Summary (Continued)

Date	Time Start-End	Duratio n (hr)	Phase	Activit y	Sub	OP Code	MD from (ft)	Operation
2/15/2015	6:00 13:00	7.00	DRLINT1	07		P	7,930.0	DRILLED 7,930' - 8,374'.
	13:00 13:30	0.50	DRLINT1	12		P	8,374.0	SERVICED RIG & TDU.
	13:30 20:30	7.00	DRLINT1	07		P	8,374.0	DRILLED 8,374' - 8,900'. INTERMEDIATE TD.
	20:30 0:30	4.00	EVLINT1	15		P	8,900.0	CBU. MAX GAS 3,747 UNITS. NO FLARE. FC FOR 25 MINUTES. WELL FLOWING @ 1/2 - 3/4 BPH WITH NO SIGN OF DECREASING. INCREASE MW FROM 10.1 - 10.4 PPG. FC. WELL STATIC.
	0:30 6:00	5.50	EVLINT1	13		P	8,900.0	POOH. FC @ 4,579' & 2,300'. WELL STATIC. BACK REAM TIGHT HOLE 6,764' - 5,530'.
2/16/2015	6:00 9:30	3.50	EVLINT1	13		P	8,900.0	POOH & LD DIRECTIONAL BHA.
	9:30 10:00	0.50	EVLINT1	12		P	8,900.0	SERVICED RIG & TDU.
	10:00 12:00	2.00	EVLINT1	13		P	8,900.0	MU RR BIT & TIH TO 2,012'.
	12:00 13:00	1.00	EVLINT1	17		P	8,900.0	S&C DRILL LINE.
	13:00 16:30	3.50	EVLINT1	13		P	8,900.0	TIH SLOW TO 8,900'. REAMED TIGHT SPOTS @ 3,986' , 4,231' , 6,575'. LOST 160 BBLS.
	16:30 21:00	4.50	EVLINT1	15		P	8,900.0	PUMP 30 PPB LCM SWEEP. C&C MUD @ REDUCED RATE TO 10.4 PPG. MAX GAS 7,498 UNITS, 4/10 MC. NO FLARE. NO LOSSES.
	21:00 4:30	7.50	EVLINT1	14		P	8,900.0	FC, WELL STATIC. LD 4½" DP & BHA. PULL WEAR BUSHING.
2/17/2015	4:30 6:00	1.50	EVLINT1	22		P	8,900.0	PJSM. RU & RUN HOWCO STANDARD QUAD COMBO.
	6:00 10:00	4.00	EVLINT1	22		P	8,900.0	RAN HES STANDARD QUAD COMBO TO 8,900'. LOG UP TO SHOE @ 2,034'.
	10:00 5:30	19.50	CASINT1	24		P	8,900.0	RU & RAN 214 JTS 7" 20# HCP-110 LT&C CSG TO 8,900'. FLOAT COLLAR @ 8,856', MARKER JT @ 6,902'. CBU @ SHOE. CIRC EVERY 1,000' FOR 10 MIN. NO LOSSES.
2/18/2015	5:30 6:00	0.50	CASINT1	15		P	8,900.0	CCM.
	6:00 7:30	1.50	CASINT1	15		P	8,900.0	C&C MUD @ 1 - 6 BPM . MAX GAS 3,881 UNITS. NO FLARE. NO LOSSES. FINAL CIRC PRESSURE 600 PSI.
	7:30 11:00	3.50	CASINT1	25		P	8,900.0	M&P PUMPED 40 BBLS 10.5 PPG TUNED SPACER . 705 SX ( 239.8 BBLS ) EXTENDACHEM LEAD CMT @ 12.5 PPG, 1.91 YLD TAILED WITH 305 SXS ( 89 BBLS ) OF EXPANDACHEM CMT @ 13 PPG, 1.64 YIELD. RELEASED TOP PLUG. DISPLACED WITH 329 BBLS OF 10 PPG MUD @ 6 - 3 BPM. BUMPED PLUG @ 10:38 HRS 2/17/15 WITH 1,617 PSI. 1.5 BBL BLED BACK, FLOATS HELD. RD CEMENTERS. RETURNS SLOWED LAST 90 BBLS DISP, LOST RETURNS LAST 15 BBLS DISP. TOTAL LOST 154 BBLS DURING CMT OPS. EST TOC 3,176'.
	11:00 12:30	1.50	CASINT1	27		P	8,900.0	LD LANDING JT. INSTALL & TEST PACK-OFF TO 5,000 PSI FOR 15MIN.
	12:30 13:30	1.00	CASINT1	31		P	8,900.0	TEST CASING TO 2,500 PSI FOR 30 MINUTES WHILE CO TDU SAVER SUB TO 4" XT-39.
	13:30 18:00	4.50	CASINT1	19		P	8,900.0	RU & TESTED 11" 5M ANNULAR TO 250 / 4,000 PSI, RAMS & REMAINING BOPE, FLOOR VALVES, ETC TO 250 / 10,000 PSI. HOLD EACH TEST 10 MINUTES.
	18:00 6:00	12.00	CASINT1	14		P	8,900.0	MU 6-1/8" BHA. TIH PICKING UP 4" DP.
2/19/2015	6:00 7:30	1.50	CASINT1	15		P	8,905.0	C & C MUD. RAISE MW TO 10.8 PPG.
	7:30 8:00	0.50	CASINT1	12		P	8,905.0	SERVICE RIG.
	8:00 9:00	1.00	CASINT1	72		P	8,905.0	DRILL CEMENT & FLOAT EQUIPMENT.
	9:00 9:30	0.50	DRLPRD	07		P	8,905.0	DRILL F/ 8,900' T/ 8,915'.
	9:30 10:00	0.50	DRLPRD	15		P	8,915.0	C & C MUD FOR FIT TEST.
	10:00 10:30	0.50	DRLPRD	33		P	8,915.0	FIT TEST EQUIVANT MW 15.4 PPG. PSI 2,130. AMW 10.8 PPG. OK.
	10:30 16:30	6.00	DRLPRD	07		P	8,915.0	DRILL F/ 8,915' T/ 9,282'.
	16:30 18:00	1.50	DRLPRD	47		N	9,282.0	SLIP & CUT DRILL LINE. DRILL LINE HAD BEEN MASHED ON BOTTOM LAYER OF DRUM. WORK ON WEIGHT INDICATOR.



## 2.1 Operation Summary (Continued)

Date	Time Start-End	Duratio n (hr)	Phase	Activit y	Sub	OP Code	MD from (ft)	Operation
2/20/2015	18:00 19:00	1.00	DRLPRD	07		P	9,282.0	DRILL F/ 9,282' T/ 9,377'.
	19:00 19:30	0.50	DRLPRD	12		P	9,377.0	SERVICED RIG & TD.
	19:30 20:00	0.50	DRLPRD	15		P	9,377.0	CIRC BU FOR WIRELINE SURVEY.
	20:00 21:00	1.00	DRLPRD	11		P	9,377.0	WIRELINE SURVEY @ 9,345'. 2.84 INC.
	21:00 6:00	9.00	DRLPRD	07		P	9,377.0	DRILL F/ 9,377' T/ 10,000'.
	6:00 10:30	4.50	DRLPRD	07		P	10,000.0	DRILL F/ 10,000' T/ 10,324'.
	10:30 11:00	0.50	DRLPRD	12		P	10,324.0	SERVICED RIG & TD..
	11:00 12:00	1.00	DRLPRD	15		P	10,324.0	CIRC BU.
	12:00 13:00	1.00	DRLPRD	11		P	10,324.0	WIRELINE SURVEY @ 10,290'. 3.18 INC.
	13:00 23:00	10.00	DRLPRD	07		P	10,324.0	DRILL F/ 10,324' T/ 11,018'.
2/21/2015	23:00 1:00	2.00	DRLPRD	43		N	11,018.0	RACKED STAND BACK. CIRC WHILE CHANGING OUT SWIVEL PACKING.
	1:00 1:30	0.50	DRLPRD	12		P	11,018.0	SERVICED RIG & TD.
	1:30 6:00	4.50	DRLPRD	07		P	11,018.0	DRILL F/ 11,018' T/ 11,200'.
	6:00 10:30	4.50	DRLPRD	07		P	11,200.0	DRILL F/ 11,200' T/ 11,506'. TD WELL @ 1030 HRS 02/20/15.
	10:30 12:00	1.50	DRLPRD	15		P	11,506.0	C & C MUD FOR WIPER TRIP. FLOW CK.
	12:00 14:00	2.00	DRLPRD	13		P	11,506.0	WIPER TRIP TO CASING SHOE.
	14:00 15:00	1.00	DRLPRD	12		P	11,506.0	SERVICE RIG & TD & TIE SERVICE LOOP BACK DUE TO HIGH WINDS.
	15:00 17:00	2.00	EVLPRD	13		P	11,505.0	FINISH WIPER TRIP. BROKE CIRC AT 8905 & 10,293'.
	17:00 20:30	3.50	DRLPRD	15		P	11,506.0	C & C MUD TO LOG. INCREASE MW F/ 11.4 T/ 11.5 VIS = 45. MAX BU GAS = 4750 UNITS. FLOW CK. PUMP SLUG.
	20:30 3:00	6.50	DRLPRD	12		P	11,506.0	POOH FOR LOGGING & CSG OPERATIONS. DROP RABBIT @ 9,650'. LD STAB & BIT. CHECKED FLOW @ 9,650', 8,900', 5,000', 2000', 600'.
2/22/2015	3:00 3:30	0.50	DRLPRD	12		P	11,506.0	CLEANED RIG FLOOR FOR LOGGING OPERATIONS.
	3:30 6:00	2.50	EVLPRD	22		P	11,506.0	PJSM. RU HES LOGGING UNIT. RU ULTRA SLIM QUAD COMBO IN HOLE.
	6:00 8:00	2.00	EVLPRD	22		P	11,506.0	RAN HES ULTRA SLIM QUAD COMBO TO 11,504' & LOG. RD WL.
	8:00 14:30	6.50	CASPRD1	24		P	11,506.0	PJSM. RU & RUN FLOAT SHOE, 1 JT 5" CASING, FLOAT COLLAR, 1 JT 5" CASING, LANDING COLLAR & RAN 65 JTS 5" 18# P-110HC STL LINER. 2 MARKER JTS. ( MARKER JTS @ 10,506' & 9,513' MAKE UP VERSAFLEX LINER HANGER ASSEMBLY & SETTING TOOL & 1 STD DP.
	14:30 15:30	1.00	CASPRD1	15		P	11,506.0	INSTALLED RH ELEMENT. CIRC LINER VOLUME @ 2.5 BPM. RD CSG CREW.
	15:30 4:00	12.50	CASPRD1	13		P	11,506.0	TIH W/ 5" LINER ON 4" DP @ 70 FPM. FILL EVERY 1,000'. & CIRC. TAG BOTTOM W/ 10 K. SPACE OUT & RU CEMENT HEAD.
	4:00 6:00	2.00	CASPRD1	15		P	11,506.0	C & C MUD @ 2.5 BPM FOR CEMENT OPERATIONS.
	6:00 7:00	1.00	CASPRD1	15		P	11,506.0	FINISH CIRC 2X BU. INITIAL RATE 1 BPM, INCREASED TO 2.5 BPM, MAX GAS 4750 UNITS BG GAS 278 UNITS. FINAL CIRC PRESSURE 374 PSI @ 2.5 BPM. NO LOSSES DURING CIRCULATION.
	7:00 8:30	1.50	CASPRD1	25		P	11,506.0	PJSM. RU HES & TESTED LINES TO 9,500 PSI. PUMPED 20 BBLS 11.4 PPG TUNED SPACER & 240 SKS 14.2 PPG WITH 1.52 YIELD EXPANDACEM CMT. WASHED LINES. DROPPED DP DART. PUMPED 60 BBLS H2O WITH 2% KCL 0.1 % BIOCID, 77 BBLS 11.1 PPG MUD. BUMPED PLUG WITH 2,579 PSI. CHECKED FLOATS, FLOATS HELD, 1.5 BBLS BLED BACK. NO LOSSES DURING CMT OPS. EST TOC 8,700'.

## 2.1 Operation Summary (Continued)

Date	Time Start-End	Duration (hr)	Phase	Activity	Sub	OP Code	MD from (ft)	Operation
	8:30 9:30	1.00	CASPRD1	25		P	11,506.0	RELEASED BALL, RUPTURE DISC @ 5,600 PSI. PUMPED 48 BBLS, PRESSURED TO 6,745 PSI, EXPANDED HANGER. PULL TESTED LINER WITH 60K OVERPULL. SAT DOWN 70K, RELEASED SETTING TOOL FROM LINER HANGER. LANDED FS @ 11,506', FC @ 11,462', LC @ 11,419'. TOL @ 8,699'. 206' OF LAP. TOTAL LINER 2,806'. MARKER JT TOPS @ 10,506' & 9,513'.
	9:30 11:00	1.50	CASPRD1	15		P	11,506.0	PULLED UP TO TOL. CIRC 2 TIMES ANNULAR VOLUME. 20 BBLS WEIGHTED SPACER & 20 BBLS CEMENT TO SURFACE. CHECKED FLOW (NEG). POSITIVE TEST TOL TO 1,000 PSI FOR 10MIN. OK
	11:00 13:30	2.50	CASPRD1	15		P	11,506.0	PUMPED 300 BBLS H2O WITH NO ADDITIVES, 280 BBLS H2O WITH 2% KCL 0.1 % BIOCIDES TILL CLEAN RETURNS. RD HES.
	13:30 1:00	11.50	CASPRD1	14		P	11,506.0	POOH LAYING DOWN 4" DP. LD LINER HANGER RUNNING TOOL. RIH W/ 24 STANDS DP & BHA F/ DERRICK. LD SAME.
	1:00 6:00	5.00	CASPRD1	29		P	11,506.0	PJSM. ND BOPE. INSTALL TUBING HEAD & 7/16" FRAC VALVE. RELEASE RIG @ 0600 HRS 02/23/15.
2/24/2015	6:00 6:00	24.00	RDMO	02		P	11,506.0	RIG DOWN. PREPARED RIG TO MOVE TO EP ENERGY 4-12C5

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## CENTRAL DIVISION

ALTAMONT FIELD  
ANDERSON 2-21C4  
ANDERSON 2-21C4  
COMPLETION LAND

### Operation Summary Report

Disclaimer: Although the information contained in this report is based on sound engineering practices, the copyright owner(s) does (do) not accept any responsibility whatsoever, in negligence or otherwise, for any loss or damage arising from the possession or use of the report whether in terms of correctness or otherwise. The application, therefore, by the user of this report or any part thereof, is solely at the user's own risk.

## 1 General

### 1.1 Customer Information

Company	CENTRAL DIVISION
Representative	
Address	

### 1.2 Well Information

Well	ANDERSON 2-21C4		
Project	ALTAMONT FIELD	Site	ANDERSON 2-21C4
Rig Name/No.		Event	COMPLETION LAND
Start date	3/2/2015	End date	
Spud Date/Time	2/11/2015	UWI	ANDERSON 2-21C4
Active datum	KB @5,878.6ft (above Mean Sea Level)		
Afe No./Description	160118/53326 / ANDERSON 2-21C4		

## 2 Summary

### 2.1 Operation Summary

Date	Time Start-End	Duration (hr)	Phase	Activity	Sub	OP Code	MD from (ft)	Operation
3/3/2015	6:00 8:00	2.00	WLWORK	28		P		CREW TRAVEL TO LOCATION HSM WRITE AND REVIEW JSA TOPIC; WIRELINE OPERATIONS
	8:00 10:30	2.50	WLWORK	22		P		MIRU OPEN WELL 0 PSI P/U 4" GAUGE RING TIH TAG PBTD AT 11360' LANDING COLLAR AT 11418' (58') TOH L/D GAUGE RING
	10:30 12:30	2.00	WLWORK	22		P		P/U TIH w LOGGING TOOLS CORRELATE AND TIE INTO THE GAMMA RAY ON THE HALLIBURTON ULTRA-SLIM SPECTRAL DENSITY DUAL SPACED NETRON ARRAY COMPENSATED TRUE RESISTIVITY LOG DATE 21-FEB-15 RUN TWO TIE IN AT 11316' LANDING COLLAR AT 11418' UNABLE TO LOG WELL TOH L/D TOOLS R/D WIRE LINE SECURE WELL 7" FRAC VALVE w NIGHT CAP 7" CSG VALVES w NIGHT CAPS SDFN
3/6/2015	6:00 7:30	1.50	WOR	28		P		CT HOLD SAFETY MTG ON MAKING CONNECTIONS W/ POWER SWIVEL, WRITE & REVIEW JSA'S
	7:30 10:30	3.00	WOR	06		P		0 PSION WELL, OPEN WELL & BEGIN CIRCULATING, SWIVEL DWN & CLEAN OUT TO LANDING COLLAR @ 11418', CIRC WELL BORE W/ 380 BBLs 2% KCL
	10:30 15:30	5.00	WOR	24		P		R.D POWER SWIVEL, POOH LD, 262 JTS 2-7/8" EUE L-80 TBG, 2-7/8" X 2-3/8" EUE X OVER, 90 JTS 2-3/8" EUE WORK STRING TBG, BIT SUB & 4-1/8" ROCK BIT
	15:30 17:00	1.50	WOR	16		P		RD WORK FLOOR, NDBOP NU 10K NIGHT CAP ON TOP OF FRAC VALVE, RIG DWN RIG & PARK ON SIDE OF LOCATION, PU LOC, SHUT FRAC VALVE CSG VALVES & INSTALL NIGHT CAP, SDFW
3/7/2015	6:00 7:30	1.50	WOR	28		P		CREW TRAVEL HOLD SAFETY MTG ON RU RIG & OVER HEAD LOADS, WRITE & REVIEW JSA'S
	7:30 10:00	2.50	WOR	16		P		SPOT IN & RU PEAK 1500, ND NIGHT CAP OFF 7" 10K FRAC VALVE, NU 5K BOP ON FRAC VALVE, RU WORK FLOOR & TBG TONGS
	10:00 15:30	5.50	WOR	24		P		MU & RIH W/ 4-1/8" BIT, BIT SUB, TALLY & P.U. 90 JTS 2-3/8" WORK STRING TBG, 2-3/8" X 2-7/8" EUE X OVER & 261 JTS NEW 2-7/8" EUE L-80 TBG, TAG FILL @ 11361', LD 1 JT 2-7/8" TBG
	15:30 16:30	1.00	WOR	18		P		RU POWER SWIVEL & CLOSE KELLY COCK VALVE, PU 1 JT 2-7/8" TBG W/ SWIVEL, CLOSE & LOCK PIPE RAMS, CLOSE & NIGHT CAP CSG VALVES, RU PUMP & PUMP LINES, SDFN

## 2.1 Operation Summary (Continued)

Date	Time Start-End	Duration (hr)	Phase	Activity	Sub	OP Code	MD from (ft)	Operation
3/10/2015	6:00 7:30	1.50	WLWORK	28		P		CREW TRAVEL TO LOCATION, HOLD SAFETY MTG ON CRANE SAFETY, WRITE & REVIEW JSA'S
	7:30 13:00	5.50	WLWORK	18		P		ND 7" NIGHT CAP RU WIRE LINE CRANE & EQUIP, RIH W/ CBL/CCL/GR & TAG @ 11395', POOH BOND LOGGING FROM 11395' TO 1900' WHILE HOLDING 4000 PSI ON CSG W/ HOT OILER, EST TOP OF CMT @ 2900', BLEED OFF PRESSURE, POOH & RIG DWN WIRE LINE, NU 7" NIGHT CAP, CLOSE CSG VALVE & INSTALL NIGHT CAP, SDFN
3/13/2015	6:00 7:30	1.50	SITEPRE	28		P		TRAVEL TO LOC HOLD SAFETY MTG ON NU FRAC STACK, WRITE & REVIEW JSA'S
	7:30 12:00	4.50	STG01	16		P		ND 7" 10K NIGHT CAP, NU FRAC STACK ON TOP OF 7" 10K FRAC VALVE, TEST CSG TO 9000 PSI & STACK TO 10,000 PSI, CLOSE ALL FRAC VALVES, CLOSE CSG VALVES & NIGHT CAP THEM
	12:00 15:00	3.00	MIRU	01		P		RUN FLOW BACK LINES & CHOKE MANIFOLD, RUN WATER TRANSFER LINES, SDFD
3/14/2015	6:00 7:30	1.50	WLWORK	28		P		TRAVEL TO LOC HOLD SAFETY MTG ON R.U. LUBRICATOR, WRITE & REVIEW JSA'S
	7:30 12:00	4.50	STG01	21		P		MIRU W.L. RIH & PERF STG 1 PERFS FROM 11280'-10941' USING 2-3/4" TITAN PERFECTA SDP, 16 GM CHARGES, 3 SPF @ 120 DEG PHASING, STARTING PRESSURE 1000 PSI ENDING PRESSURE 950 PSI, ALL PERF CORRELATED TO CUTTERS RADIAL CEMENT BOND GAMMA RAY CCL RUN # 1 MARCH 9 2015, POOH RD WIRE LINE, CLOSE IN 7" FRAC VALVE CLOSE & LOCK HCR VALVES, CLOSE & NIGHT CAP CSG VALVE, SDFD
3/15/2015	6:00 20:00	14.00	SITEPRE	28		P		TRAVEL TO LOC, HOLD SAFETY MTG ON HEATING FRAC WATER WRITE & REVIEW JSA'S, RU HEATERS & HEAT FRAC WATER
3/16/2015	6:00 14:00	8.00	MIRU	01		P		TRAVEL TO LOCATION, HOLD SAFETY MTG ON RU FRAC LINES, WRITE & REVIEW JSA'S, MIRU FRAC EQUIP
3/17/2015	6:00 8:00	2.00	STG01	28		P		TRAVEL TO LOC, HOLD SAFETY MTG ON FRACING & PERFING OPERATIONS, WRITE & REVIEW JSA'S
	8:00 9:30	1.50	STG01	35		P		TEST PUMP LINES TO 9290 PSI, OPEN WELL CSG PSI 440 PSI, BREAK DWN STG 1 PERFS @ 5014 PSI @ 11 BPM, STEP DWN RATE IN 4 STGS, ISIP 4499 PSI, 5 MIN 4427 PSI, 10 MIN 4381 PSI, F.G. .83, TREAT PERFS W/ 5000 GALS 15% ACID, 3000 LBS 100 MESH IN 1/2 PPG STG, 150,000 LBS THS 30/50 IN 1/2 LB, 1, 2 & 3 LB STGS, ISIP 4778 PSI, AVG RATE 77 BPM, MAX RATE 83 BPM, AVG PRESSURE 5689 PSI & MAX PRESSURE 8161 PSI, F.G. .86, 3790 BBLS TO RECOVER, CLOSE IN WELL & TURN OVER TO WIRE LINE
	9:30 11:30	2.00	STG02	21		P		TEST W.L. LUBRICATOR TO 6000 PSI, RIH & SET 5" CBP @ 10889'. PERFORATE STAGE 2 PERFORATIONS FROM 10874' TO 10595', USING 2-3/4" TITAN PERFECTA SDP GUNS, 16 GRAM CHARGES, 3 SPF, 120 DEGREE PHASING. STARTING PRESSURE 4500 PSI ENDING 4400 PSI, SHUT WELL IN & TURN OVER TO FRAC CREW.
	11:30 13:00	1.50	STG02	35		P		TEST PUMP LINES TO 9166 PSI, OPEN WELL CSG PSI 3834 PSI, BREAK DWN STG 2 PERFS @ 4935 PSI @ 11 BPM, STEP DWN RATE IN 4 STGS, ISIP 4470 PSI, 5 MIN 4417 PSI, 10 MIN 4388 PSI, F.G. .84, TREAT PERFS W/ 5000 GALS 15% ACID, 3000 LBS 100 MESH IN 1/2 PPG STG, 150,000 LBS THS 30/50 IN 1/2 LB, 1, 2 & 3 LB STGS, ISIP 4578 PSI, AVG RATE 76 BPM, MAX RATE 76.9 BPM, AVG PRESSURE 5496 PSI & MAX PRESSURE 7388 PSI, F.G. .85, 3769 BBLS TO RECOVER, CLOSE IN WELL & TURN OVER TO WIRE LINE



## 2.1 Operation Summary (Continued)

Date	Time Start-End	Duration (hr)	Phase	Activity	Sub	OP Code	MD from (ft)	Operation
	13:00 14:30	1.50	STG03	21		P		RIH & SET 5" CBP @ 10580'. PERFORATE STAGE 3 PERFORATIONS FROM 10559' TO 10308', USING 2-3/4" TITAN PERFECTA SDP GUNS, 16 GRAM CHARGES, 3 SPF, 120 DEGREE PHASING. STARTING PRESSURE 4500 PSI ENDING 4500 PSI, SHUT WELL IN & TURN OVER TO FRAC CREW.
	14:30 16:00	1.50	STG03	35		P		TEST PUMP LINES TO 9162 PSI, OPEN WELL CSG PSI 4427 PSI, BREAK DWN STG 3 PERFS @ 4759 PSI @ 10 BPM, STEP DWN RATE IN 4 STGS, ISIP 4467 PSI, 5 MIN 4460 PSI, 10 MIN 4438 PSI, F.G. .86, TREAT PERFS W/ 5000 GALS 15% ACID, 3000 LBS 100 MESH IN 1/2 PPG STG, 150,000 LBS TLC 30/50 IN 1/2 LB, 1, 2 & 3 LB GELLED, ISIP 4649 PSI, AVG RATE 76 BPM, MAX RATE 78 BPM, AVG PRESSURE 5531 PSI & MAX PRESSURE 7374 PSI, F.G. .87, 3751 BBLS TO RECOVER, CLOSE IN WELL & TURN OVER TO WIRE LINE
	16:00 18:30	2.50	STG04	21		P		RIH & SET 5" CBP @ 10264'. PERFORATE STAGE 4 PERFORATIONS FROM 10249' TO 9995', USING 2-3/4" TITAN PERFECTA SDP GUNS, 16 GRAM CHARGES, 3 SPF, 120 DEGREE PHASING. STARTING PRESSURE 4600 PSI ENDING 4500 PSI, POOH W/ W.L., SHUT 10K FRAC VALVE, 2 HCR VALVES & NIGHT CAP ON TOP OF FRAC STACK, FLOW CROSS VALVES SHUT W/ NIGHT CAPS ON & CLOSED CSG VALVES SHUT W/ NIGHT CAPS ON & CLOSED, GREASE FRAC STACK VALVES & SDFN
3/18/2015	6:00 7:00	1.00	STG04	28		P		TRAVEL TO LOC, HOLD SAFETY MTG ON HIGH PRESSURE PUMP LINES WRITE & REVIEW JSA'S, START & WARM UP EQUIP
	7:00 8:30	1.50	STG04	35		P		TEST PUMP LINES TO 9660 PSI, OPEN WELL CSG PSI 4277 PSI, BREAK DWN STG 4 PERFS @ 4906 PSI @ 11 BPM, STEP DWN RATE IN 4 STGS, ISIP 4367 PSI, 5 MIN 4141 PSI, 10 MIN 4070 PSI, F.G. .86, TREAT PERFS W/ 5000 GALS 15% ACID, 3000 LBS 100 MESH IN 1/2 PPG STG, 150,00 LBS TLC 30/50 IN 1/2 LB, 1, 2 & 3 LB STGS, ISIP 4674 PSI, AVG RATE 76 BPM, MAX RATE 79 BPM, AVG PRESSURE 5543 PSI & MAX PRESSURE 7374 PSI, F.G. .89, 3754 BBLS TO RECOVER, CLOSE IN WELL & TURN OVER TO WIRE LINE
	8:30 10:30	2.00	STG05	21		P		PU LUBRICATOR & GUNS W/ PLUG TEST LUBE TO 7500 PSI, RIH & SET 5" CBP @ 9979'. PERFORATE STAGE 5 PERFORATIONS FROM 9964' TO 9744', USING 2-3/4" TITAN PERFECTA SDP GUNS, 16 GRAM CHARGES, 3 SPF, 120 DEGREE PHASING. STARTING PRESSURE 4300 PSI ENDING 4100 PSI, POOH W/ W.L., SHUT IN WELL & TURN WELL OVER TO FRAC CREW.
	10:30 12:00	1.50	STG05	35		P		TEST PUMP LINES TO 9220 PSI, OPEN WELL CSG PSI 3966 PSI, BREAK DWN STG 5 PERFS @ 4424 PSI @ 10 BPM, STEP DWN RATE IN 4 STGS, ISIP 4199 PSI, 5 MIN 4084 PSI, 10 MIN 4020 PSI, F.G. .86, TREAT PERFS W/ 5000 GALS 15% ACID, 3000 LBS 100 MESH IN 1/2 PPG STG, 150,000 LBS TLC 30/50 IN 1/2 LB, 1, 2 & 3 LB STGS, ISIP 4528 PSI, AVG RATE 77 BPM, MAX RATE 77 BPM, AVG PRESSURE 5230 PSI & MAX PRESSURE 6666 PSI, F.G. .89, 3742 BBLS TO RECOVER, CLOSE IN WELL & TURN OVER TO WIRE LINE
	12:00 13:30	1.50	STG06	21		P		RIH & SET 5" CBP @ 9725'. PERFORATE STAGE 6 PERFORATIONS FROM 9710' TO 9446', USING 2-3/4" TITAN PERFECTA SDP GUNS, 16 GRAM CHARGES, 3 SPF, 120 DEGREE PHASING. STARTING PRESSURE 4300 PSI ENDING 3800 PSI, POOH W/ W.L., SHUT IN WELL & TURN OVER TO FRAC CREW

## 2.1 Operation Summary (Continued)

Date	Time Start-End	Duration (hr)	Phase	Activity	Sub	OP Code	MD from (ft)	Operation
	13:30 15:00	1.50	STG06	35		P		TEST PUMP LINES TO 9223 PSI, OPEN WELL CSG PSI 3827 PSI, BREAK DWN STG 6 PERFS @ 4177 PSI @ 10 BPM, STEP DWN RATE IN 4 STGS, ISIP 3848 PSI, 5 MIN 3741 PSI, 10 MIN 3701 PSI, F.G. .83, TREAT PERFS W/ 5000 GALS 15% ACID, 3000 LBS 100 MESH IN 1/2 PPG STG, 150,000 LBS TLC 30/50 IN 1/2 LB, 1, 2 & 3 LB STGS, ISIP 4109 PSI, AVG RATE 77 BPM, MAX RATE 78 BPM, AVG PRESSURE 5046 PSI & MAX PRESSURE 6265 PSI, F.G. .86, 3716 BBLS TO RECOVER, CLOSE IN WELL & TURN OVER TO WIRE LINE
	15:00 16:00	1.00	STG07	21		P		RIH & SET 5" CBP @ 9434'. PERFORATE STAGE 7 PERFORATIONS FROM 9419' TO 9163', USING 2-3/4" TITAN PERFECTA SDP GUNS, 16 GRAM CHARGES, 3 SPF, 120 DEGREE PHASING. STARTING PRESSURE 3800 PSI ENDING 3700 PSI, POOH W/ W.L., SHUT IN WELL & TURN OVER TO FRAC CREW
	16:00 17:30	1.50	STG07	35		P		TEST PUMP LINES TO 9870 PSI, OPEN WELL CSG PSI 3365 PSI, BREAK DWN STG 7 PERFS @ 3616 PSI @ 10 BPM, STEP DWN RATE IN 4 STGS, ISIP 3494 PSI, 5 MIN 3383 PSI, 10 MIN 3358 PSI, F.G. .80, TREAT PERFS W/ 5000 GALS 15% ACID, 3000 LBS 100 MESH IN 1/2 PPG STG, 150,000 LBS TLC 30/50 IN 1/2 LB, 1, 2 & 3 LB GELLED STGS, ISIP 4002 PSI, AVG RATE 76 BPM, MAX RATE 77 BPM, AVG PRESSURE 4551 PSI & MAX PRESSURE 5654 PSI, F.G. .86, 3723 BBLS TO RECOVER, CLOSE IN WELL & TURN OVER TO WIRE LINE.
	17:30 19:30	2.00	STG08	21		P		RIH & SET 5" CBP @ 9152'. PERFORATE STAGE 8 PERFORATIONS FROM 9132' TO 8947', USING 2-3/4" TITAN PERFECTA SDP GUNS, 16 GRAM CHARGES, 3 SPF, 120 DEGREE PHASING. STARTING PRESSURE 3500 PSI ENDING 3500 PSI, POOH W/ W.L., SHUT 10K FRAC VALVE, 2 HCR VALVES & NIGHT CAP ON TOP OF FRAC STACK, FLOW CROSS VALVES SHUT W/ NIGHT CAPS ON & CLOSED, CSG VALVES SHUT W/ NIGHT CAPS ON & CLOSED, GREASE FRAC STACK VALVES & SDFN
3/19/2015	6:30 7:30	1.00	STG08	28		P		TRAVEL TO LOC HOLD SAFETY MTG ON, OPERATING HCR VALVES, WRITE & REVIEW JSA'S
	7:30 9:30	2.00	STG08	35		P		START & WARM UP PUMPS,PRESSURE TEST LINES TO 9330 PSI. OPEN WELL. SICP 2657 PSI. BREAK DOWN STAGE 8 PERFORATIONS @ 3591 PSI, PUMPING 10 BPM. BRING RATE UPTO 34 BPM. PUMP 85 TTL BBLS FLUID THEN PERFORM STEP RATE SHUT DOWN. ISIP 3465 PSI. FG .81. 5 MIN 3035 PSI. 10 MIN 2865 PSI. TREAT STAGE 8 PERFORATIONS W/ 5000 GALLONS HCL ACID, 3000LBS 100 MESH SAND IN 1/2 PPG STAGE & 145,000 LBS TLC 30/50 SAND IN 1/2 PPG, 1 PPG, 2 PPG & 3 PPG STAGES. JOB WAS DESIGNED FOR 150,000 LBS 30/50 SAND, HAD TO CUT SAND & ATTEMPT TO FLUSH, SCREENED OUT, AVG RATE 79 BPM. MAX RATE 80 BPM. AVG PSI 4570 PSI. MAX PSI 8912 PSI. 3351 BBLS TO RECOVER, CLOSE FRAC VALVE, BOTH HCR VALVES & NIGHT CAP ON TOP OF STACK, FLOW CROSS VALVES & CSG VALVES CLOSED & NIGHT CAPS, EST SAND TOP @ 6775'
	9:30 12:30	3.00	RDMO	02		P		RIG DWN, CLEAN UP LOC & MOVE OFF LOC W/ FRAC CREW, RIG DWN WATER TRANSFER LINES & PUMP
	12:30 16:00	3.50	CTU	18		P		WAIT FOR COIL TBG EQUIP TO SHOW UP TO LOC, THE REEL TRUCK & NITROGEN TRUCK IS ALL THAT COULD MAKE IT TO LOCATION TODAY, OTHER EQUIP WILL BE ON LOCATION IN MORNING, SDFN

3/20/2015

## 2.1 Operation Summary (Continued)

Date	Time Start-End	Duration (hr)	Phase	Activity	Sub	OP Code	MD from (ft)	Operation
	6:00 8:00	2.00	CTU	28		P		TRAVEL TO LOC W/ REST OF COIL TBG EQUIP, GO THRU SAFETY ORIENTATION W/ C&J COIL TBG CREW, HOLD SAFETY MTG ON RU COIL TBG USING, TAG LINES & PINCH POINTS
	8:00 15:00	7.00	MIRU	01		P		SPOT IN & RU C&J 2" COIL TBG UNIT, MU COIL CONNECTOR, PULL & PRESSURE TEST, MU MTR ASSY W/ NEW 4-1/8" JZ ROCK BIT, FUNCTION TEST MTR ASSY, NU CT BOP, PRESSURE TEST STACK & FLOW BACK LINES TO 9000 PSI
	15:00 6:00	15.00	CTU	10		P		OPEN WELL @ 8600 PSI TO FLOW BACK TANK ON 12/64 CHOKE PRESSURE BLED DWN TO 200 PSI, OPEN CHOKE, FLOWING BACK 3 BPM @ 0 PSI, RIH W, CT PUMPING .5 BPM, RETURNING 3.5 BPM, CHANGE PUMP RATE TO 3 BPM, RETURNING 4 BPM, RETURNING SAND & HEAVY GEL FOR 300 BBLS, CONT TIH DRILL OUT 5" CBP'S @ 9152', 9434', 9725', 9979', 10264', 10580' & 10889', CONT IN HOLE & CLEAN OUT TO L.C. 11408' CTM, CIRC 1 HR ON BTM & 1 HR @ LINER TOP, TOOH W/ CT, BREAK OUT & L.D. MTR ASSY, BLOW COIL TBG DRY
3/21/2015	6:00 6:30	0.50	RDMO	02		P		CONT RIGGING DWN COIL TBG UNIT
	6:30 6:00	23.50	FB	19		P		OPEN WELL ON 12/64 CHOKE @ 3300 PSI & TURN OVER TO FLOW BACK CREW FLOWING TO FLOW BACK TANKS, FLOWED 1307 BBLS WATER 0 OIL & 0 MCF
3/22/2015	6:00 6:00	24.00	FB	19		P		HOLD SAFETY MTG ON GAUGING TANKS, WRITE & REVIEW JSA'S, WELL FLOWING ON 12/64 CHOKE @ 2000 PSI FLOWED 0 BBLS OIL, 1070 BBLS WATER & 0 MCF
3/23/2015	6:00 6:00	24.00	FB	19		P		HOLD SAFETY MTG ON PROPPER PPE FOR JOB, WRITE & REVIEW JSA'S, WELL FLOWING @ 1850 PSI, ON 12/64 CHOKE, FLOWED 74 BBLS OIL, 741 BBLS WATER & 100 MCF
3/24/2015	6:00 7:30	1.50	WLWORK	28		P		TRAVEL TO LOC HOLD SAFETY MTG ON, THE IMPORTANCE OF STOP WORK AUTHORITY, WRITE & REVIEW JSA'S
	7:30 9:30	2.00	INSTUB	20		P		CSG PSI 1800 PSIG, MIRU W.L., RIH W/ 2-7/8" SOLID BULL PLUG, 2-7/8" X 4' N-80 PERF SUB, PUMP OUT PLUG NIPPLE W/ PLUG, 2-3/8" N-80 X 4' TBG SUB, 5" W.L. SET PKR W/ 1.87 X PROFILE NIPPLE, TOOH RD WIRE LINE
	9:30 13:00	3.50	INSTUB	16		P		BLOW WELL DWN RECOVERING 24 BBLS OIL, 86 BBLS WATER & 68 MCF, ND FRAC STACK TO 7" 10K FRAC VALVE, NU 5K BOP, MIRU PEAK 2500, RU WORK FLOOR & TBG TONGS
	13:00 13:00	0.00	INSTUB	24		P		MU & RIH W/ 5" ON-OFF SKIRT, 5 JTS 2-3/8" EUE L-80 TBG, 2-7/8" X 2-3/8" EUE X OVER & 259 JTS 2-7/8" EUE L-80 TBG, E.O.T @ 8625, CLOSE & LOCK PIPE RAMS, INSTALL & CLOSE TIW VALVE W/ NIGHT CAP, CLOSE CSG VALVES & NIGHT CAP, SDFN
3/25/2015	6:00 7:30	1.50	WOR	28		P		CT HOLD SAFETY MTG ON P.U. TBG & OVER HEAD LOADS WRITE & REVIEW JSA'S
	7:30 8:30	1.00	WOR	24		P		0 PSI ON WELL, OPEN WELL, PU 6 JTS 2-7/8" TBG, LATCH ONTO PKR, LAY DWN 2 JTS 2-7/8" TBG, SPACE OUT TBG W/ 2' X 2-7/8" N-80 TBG SUB & 1' X 2-7/8" TBG SUB
	8:30 10:00	1.50	WOR	06		P		CIRC WELL BORE W/ 340 BBLS 2% KCL MIXED W/ PKR FLUID
	10:00 12:30	2.50	WOR	16		P		RIH W/ 1' X 2-7/8" TBG SUB, 2' X 2-7/8" TBG SUB & 1 JT 2-7/8" TBG, 6' TBG SUB & TBG HANGER W/ BACK PRESSURE VALVE, LATCH ONTO PKR & TEMPORARILY LAND TBG, RIG DWN WORK FLOOR, NDBOP & 7" 10K FRAC VALVE, POOH W/ HANGER & LAY DWN 6' TBG SUB, MU HANGER W/ BACK PSI VALVE, LAND TBG IN 15K TENSION, NUWH & TEST VOID TO 10,000 PSI, PLUMB FLOW LINES & TEST TO 5000 PSI, TEST CSG TO 1000 PSI GOOD TEST

## 2.1 Operation Summary (Continued)

Date	Time Start-End	Duration (hr)	Phase	Activity	Sub	OP Code	MD from (ft)	Operation
	12:30 15:00	2.50	WOR	18		P		RIG DWN RIG, PU LOCATION, RU HOT OILER TO TBG & ATTEMPT TO PUMP OUT PLUG IN PKR @ 5000 PSI MULTIPLE TIMES, CSG & TBG STARTED COMMUNICATING CSG PRESSURE WOULD RAISE 500 PSI IN 5 MIN, RU FOUR STAR HYDRO TEST TRUCK & PUMP TBG UP TO 6000 PSI TO PUMP OUT PLUG, RIG DWN & MOVE OFF LOCATION, TURN WELL OVER TO FLOW TESTER @ 1950 PSI ON 12/64 CHOKE
3/26/2015	6:00 6:00	24.00	FB	19		P		HOLD SAFETY MTG ON HIGH PRESSURE LINES WRITE & REVIEW JSA'S, WELL FLOWING @ 2000 PSI ON 12/64 CHOKE FLOWED 112 BBLS OIL, 398 BBLS WATER & 76 MCF
3/27/2015	6:00 6:00	24.00	FB	19		P		HOLD SAFETY MTG ON CHANGING CHOKES WRITE & REVIEW JSA'S, WELL FLOWING ON 14/64 CHOKE @ 1750 PSI FLOWED 300 BBLS OIL, 608 BBLS WATER & 280 MCF

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<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		<b>FORM 9</b>
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> Fee
<b>1. TYPE OF WELL</b> Oil Well		<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>
<b>2. NAME OF OPERATOR:</b> EP ENERGY E&P COMPANY, L.P.		<b>7. UNIT or CA AGREEMENT NAME:</b>
<b>3. ADDRESS OF OPERATOR:</b> 1001 Louisiana, Houston, TX, 77002		<b>8. WELL NAME and NUMBER:</b> Anderson 2-21C4
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0860 FNL 1004 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNW Section: 21 Township: 03.0S Range: 04.0W Meridian: U		<b>9. API NUMBER:</b> 43013529020000
<b>PHONE NUMBER:</b> 713 997-5138 Ext		<b>9. FIELD and POOL or WILDCAT:</b> ALTAMONT
<b>COUNTY:</b> DUCHESNE		<b>STATE:</b> UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start: <b>11/28/2016</b>	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input checked="" type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION OTHER: <input style="width: 100px;" type="text"/>
<input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:			
<input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:			
<input type="checkbox"/> <b>DRILLING REPORT</b> Report Date:			

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.  
 Please find attached the proposed recompletion procedure along with current and post WBD's.

Approved by the  
November 08, 2016  
Oil, Gas and Mining

Date: \_\_\_\_\_

By: Derek Duff

<b>NAME (PLEASE PRINT)</b> Linda Renken	<b>PHONE NUMBER</b> 713 997-5138	<b>TITLE</b> Sr. Regulatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 10/21/2016	



## Anderson 2-21 C4 - Recom Summary Procedure

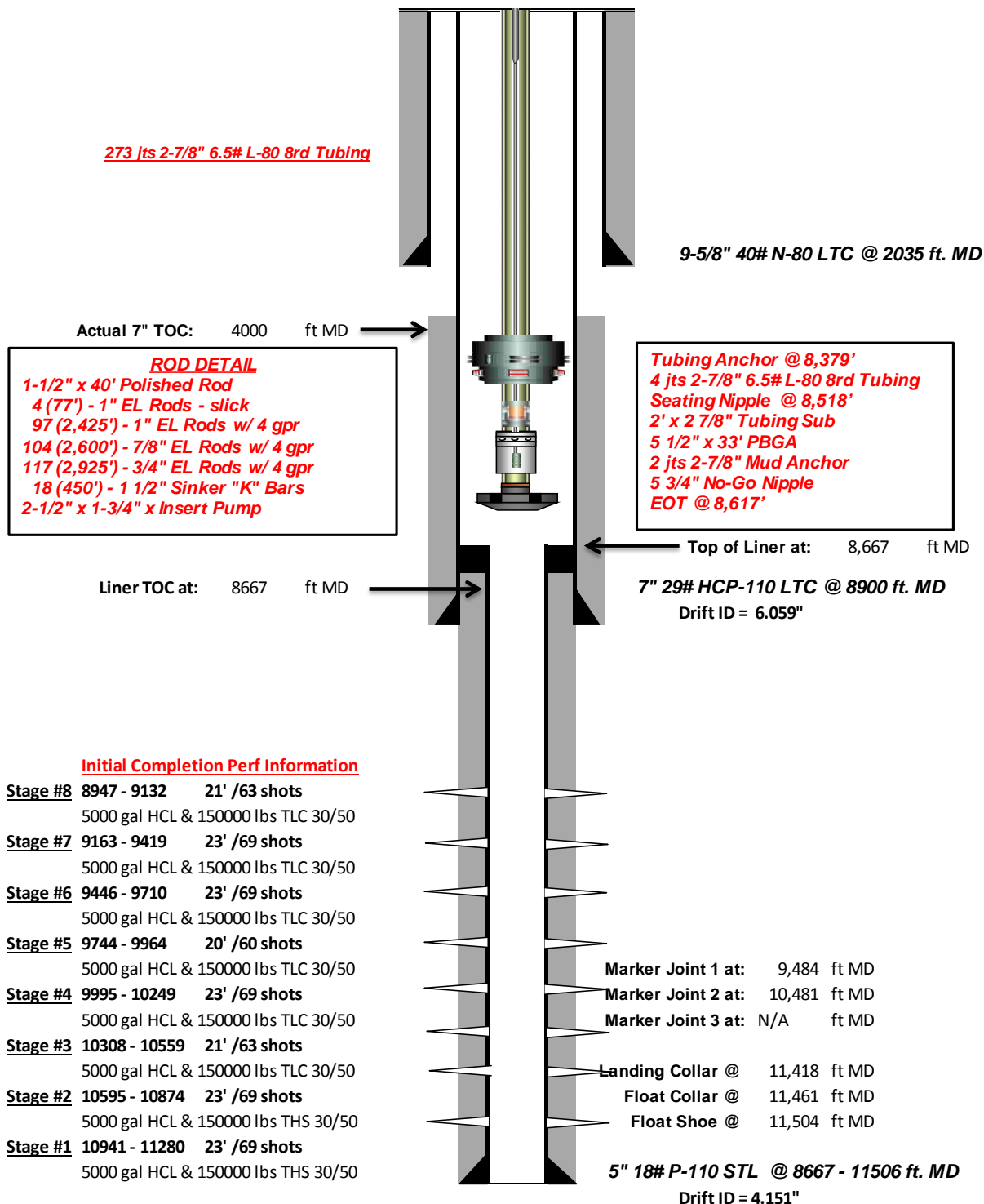
- POOH with co-rod, pump & tubing. Inspect/Repair/Re-furbish as needed. Replace any bad tubing and joints of rods.
- Set 15k CBP for 5" 18# casing @ 8,940' w/ 15' cement dump bailed on plug. Test casing to frac pressure.
- Stage 1:
  - Perforate new CP 70 interval from **8,724' - 8,885'**.
  - Prop Frac perforations with **95,000** lbs 30/50 prop (w/ **7,000** lbs 100 mesh & **7,000** gals 15% HCl acid) (Stage 1 Recom).
- Stage 2:
  - RIH with 7" CBP & set @ **8,702'**.
  - Perforate new LGR interval from **8,584' - 8,687'**.
  - Prop Frac perforations with **60,000** lbs 30/50 prop (w/ **6,000** lbs 100 mesh & **6,000** gals 15% HCl acid) (Stage 2 Recom).
- Stage 3:
  - RIH with 7" CBP & set @ **8,510'**.
  - Perforate new LGR interval from **8,389 - 8,495'**.
  - Acid Frac Perforations with **12,000** gals 15% HCl acid (Stage 3 Recom).
- Stage 4:
  - RIH with 7" CBP & set @ **8,289'**.
  - Perforate new LGR interval from **8,190' - 8,274'**.
  - Acid Frac Perforations with **10,000** gals 15% HCl acid (Stage 4 Recom).
- Stage 5:
  - RIH with 7" CBP & set @ **8,019'**.
  - Perforate new LGR interval from **7,773' - 8,004'**.
  - Prop Frac perforations with **125,000** lbs 30/50 prop (w/ **8,000** lbs 100 mesh & **8,000** gals 15% HCl acid) (Stage 5 Recom).
- Clean out well drilling up (4) 7" CBPs at 8,019', 8,289', 8,510', and 8,702', leaving cement and 5" 15k CBP @ 8,940' w/ 15' CMT. Top perf BELOW plugs @ 8,947'.
- RIH w/ production tubing and rods.
- Clean location and resume production.



### Current Pumping Wellbore Schematic

Well Name: **Anderson 2-21C4**  
 Company Name: **EP Energy**  
 Field, County, State: **Altamont, Duchesne, Utah**  
 Surface Location: **Lat: 40° 12' 39.46" N Long: 110° 20' 50.48" W**  
 Producing Zone(s): **Wasatch**

Last Updated: **10/17/2016**  
 By: **Fondren**  
 TD: **11,504**  
 API: **4301352902**  
 AFE:





### Proposed Recompletion Schematic

Well Name: **Anderson 2-21C4**  
 Company Name: **EP Energy**  
 Field, County, State: **Altamont, Duchesne, Utah**  
 Surface Location: **Lat: 40° 12' 39.46" N Long: 110° 20' 50.48" W**  
 Producing Zone(s): **Wasatch**

Last Updated: **10/17/2016**  
 By: **Fondren**  
 PBTD: **11,418'**  
 API: **4301352902**  
 AFE:

273 jts 2-7/8" 6.5# L-80 8rd Tubing

2016 Recompletion
STG 5: 7,773' - 8,004' (23'/69 holes) 8,000 gals HCl + 8,000# 100M + 125,000# 30/50
STG 4: 8,190' - 8,274' (13'/39 holes) 10,000 gals HCl
STG 3: 8,389' - 8,495' (11'/33 holes) 12,000 gals HCl
STG 2: 8,584' - 8,687' (13'/39 holes) 6,000 gals HCl + 6,000# 100M + 60,000# 30/50
STG 1: 8,724' - 8,885' (18'/54 holes) 7,000 gals HCl + 7,000# 100M + 95,000# 30/50
*NOTE ALL PERF DEPTHS ARE OPEN HOLE**

Liner TOC at: 8667 ft MD

9-5/8" 40# N-80 LTC @ 2035 ft. MD

Actual 7" TOC: 4,000' MD

Top of Liner at: 8,667 ft MD

7" 29# HCP-110 LTC @ 8900 ft. MD  
Drift ID = 6.059"

### Initial Completion Perf Information

**Stage #8** 8947 - 9132 21' /63 shots  
5000 gal HCL & 150000 lbs TLC 30/50

**Stage #7** 9163 - 9419 23' /69 shots  
5000 gal HCL & 150000 lbs TLC 30/50

**Stage #6** 9446 - 9710 23' /69 shots  
5000 gal HCL & 150000 lbs TLC 30/50

**Stage #5** 9744 - 9964 20' /60 shots  
5000 gal HCL & 150000 lbs TLC 30/50

**Stage #4** 9995 - 10249 23' /69 shots  
5000 gal HCL & 150000 lbs TLC 30/50

**Stage #3** 10308 - 10559 21' /63 shots  
5000 gal HCL & 150000 lbs TLC 30/50

**Stage #2** 10595 - 10874 23' /69 shots  
5000 gal HCL & 150000 lbs THS 30/50

**Stage #1** 10941 - 11280 23' /69 shots  
5000 gal HCL & 150000 lbs THS 30/50

5" 15K CBP @ 8,940' w/ 15' CMT

Marker Joint 1 at: 9,484 ft MD  
 Marker Joint 2 at: 10,481 ft MD  
 Marker Joint 3 at: N/A ft MD

Landing Collar @ 11,418 ft MD  
 Float Collar @ 11,461 ft MD  
 Float Shoe @ 11,504 ft MD

5" 18# P-110 STL @ 8667 - 11506 ft. MD  
Drift ID = 4.151"

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MININGAMENDED REPORT ☐ FORM 8  
(highlight changes)

5. LEASE DESIGNATION AND SERIAL NUMBER:

## WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☐ OTHER \_\_\_\_\_b. TYPE OF WORK: NEW WELL ☐ HORIZ. LATS. ☐ DEEP-EN ☐ RE-ENTRY ☐ DIFF. RESVR. ☐ OTHER \_\_\_\_\_

2. NAME OF OPERATOR:

3. ADDRESS OF OPERATOR:

CITY

STATE

ZIP

PHONE NUMBER:

4. LOCATION OF WELL (FOOTAGES)

AT SURFACE:

AT TOP PRODUCING INTERVAL REPORTED BELOW:

AT TOTAL DEPTH:

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT or CA AGREEMENT NAME

8. WELL NAME and NUMBER:

9. API NUMBER:

10 FIELD AND POOL, OR WILDCAT

11. QTR/QTR, SECTION, TOWNSHIP, RANGE,  
MERIDIAN:

12. COUNTY

13. STATE

UTAH

14. DATE SPUDDED:

15. DATE T.D. REACHED:

16. DATE COMPLETED:

ABANDONED ☐READY TO PRODUCE ☐

17. ELEVATIONS (DF, RKB, RT, GL):

18. TOTAL DEPTH: MD

TVD

19. PLUG BACK T.D.: MD

TVD

20. IF MULTIPLE COMPLETIONS, HOW MANY? \*

21. DEPTH BRIDGE MD

PLUG SET:

TVD

22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each)

23.

WAS WELL CORED?

NO ☐YES ☐

(Submit analysis)

WAS DST RUN?

NO ☐YES ☐

(Submit report)

DIRECTIONAL SURVEY?

NO ☐YES ☐

(Submit copy)

## 24. CASING AND LINER RECORD (Report all strings set in well)

HOLE SIZE	SIZE/GRADE	WEIGHT (#/ft.)	TOP (MD)	BOTTOM (MD)	STAGE CEMENTER DEPTH	CEMENT TYPE & NO. OF SACKS	SLURRY VOLUME (BBL)	CEMENT TOP **	AMOUNT PULLED

## 25. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)

## 26. PRODUCING INTERVALS

FORMATION NAME	TOP (MD)	BOTTOM (MD)	TOP (TVD)	BOTTOM (TVD)
(A)				
(B)				
(C)				
(D)				

## 27. PERFORATION RECORD

INTERVAL (Top/Bot - MD)	SIZE	NO. HOLES	PERFORATION STATUS
			Open <input type="checkbox"/> Squeezed <input type="checkbox"/>
			Open <input type="checkbox"/> Squeezed <input type="checkbox"/>
			Open <input type="checkbox"/> Squeezed <input type="checkbox"/>
			Open <input type="checkbox"/> Squeezed <input type="checkbox"/>

## 28. ACID, FRACTURE, TREATMENT, CEMENT SQUEEZE, ETC.

WAS WELL HYDRAULICALLY FRACTURED?

YES ☐NO ☐

IF YES -- DATE FRACTURED:

DEPTH INTERVAL

AMOUNT AND TYPE OF MATERIAL

## 29. ENCLOSED ATTACHMENTS:

☐ ELECTRICAL/MECHANICAL LOGS ☐ GEOLOGIC REPORT ☐ DST REPORT ☐ DIRECTIONAL SURVEY  
☐ SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION ☐ CORE ANALYSIS ☐ OTHER: \_\_\_\_\_

## 30. WELL STATUS:

**31. INITIAL PRODUCTION****INTERVAL A (As shown in item #26)**

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

**INTERVAL B (As shown in item #26)**

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

**INTERVAL C (As shown in item #26)**

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

**INTERVAL D (As shown in item #26)**

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

**32. DISPOSITION OF GAS (Sold, Used for Fuel, Vented, Etc.)****33. SUMMARY OF POROUS ZONES (Include Aquifers):**

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

**34. FORMATION (Log) MARKERS:**

Formation	Top (MD)	Bottom (MD)	Descriptions, Contents, etc.	Name	Top (Measured Depth)

**35. ADDITIONAL REMARKS (Include plugging procedure)**

**36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.**

NAME (PLEASE PRINT) \_\_\_\_\_ TITLE \_\_\_\_\_

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

This report must be submitted within 30 days of

- completing or plugging a new well
- drilling horizontal laterals from an existing well bore
- recompleting to a different producing formation
- reentering a previously plugged and abandoned well
- significantly deepening an existing well bore below the previous bottom-hole depth
- drilling hydrocarbon exploratory holes, such as core samples and stratigraphic tests

\* ITEM 20: Show the number of completions if production is measured separately from two or more formations.

\*\* ITEM 24: Cement Top – Show how reported top(s) of cement were determined (circulated (CIR), calculated (CAL), cement bond log (CBL), temperature survey (TS)).

Send to: Utah Division of Oil, Gas and Mining  
1594 West North Temple, Suite 1210  
Box 145801  
Salt Lake City, Utah 84114-5801

Phone: 801-538-5340

Fax: 801-359-3940

**Attachment to Well Completion Report**

**Date:** \_

**Well Name:** \_

**Items #27 and #28 Continued**

**27. Perforation Record**

Interval (Top/Bottom-MD)	Hole Size	No. of Holes	Perf. Status

**28. Acid, Fracture, Treatment, Cement Squeeze, Etc.**

Depth Interval	Amount and Type of Material



## 1 General

### 1.1 Customer Information

Company	CENTRAL DIVISION
Representative	
Address	

### 1.2 Well Information

Well	ANDERSON 2-21C4		
Project	ALTAMONT FIELD	Site	ANDERSON 2-21C4
Rig Name/No.		Event	RECOMPLETE LAND
Start date	11/28/2016	End date	
Spud Date/Time	2/11/2015	UWI	ANDERSON 2-21C4
Active datum	KB @5,878.6ft (above Mean Sea Level)		
Afe No./Description	167441/57485 / ANDERSON 2-21C4		

## 2 Summary

### 2.1 Operation Summary

Date	Time Start-End	Duration (hr)	Phase	Activity Code	Sub	OP Code	MD from (ft)	Operation
11/29/2016	7:00 8:00	1.00	WOR	28		P		CT HOLD SAFETY MTG ON RIGGING UP RIG WRITE & REVIEW JSA'S
	8:00 9:30	1.50	MIRU	01		P		ROAD RIG TO LOC, UNHANG RODS & SLIDE P.U. BACK, SPOT IN & R.U. RIG, WHILE PUMPING 100 BBLS HOT 2% KCL DWN CSG
	9:30 11:30	2.00	WOR	39		P		LD POLISH ROD, PU WORK ROD, ATTEMPT TO UNSEAT PUMP NO LUCK, RU BACK OFF TOOL BACK OFF RODS, POOH W/ 97-1" & 12-7/8" RODS TO BACK OFF
	11:30 14:00	2.50	WOR	16		P		NDWH, PU ON TBG BREAK OUT & LD B-FLANGE, MU 6' PERF SUB & TBG HANGER W/ 2 WAY CHECK, TEMP LAND TBG, NU & TEST BOP 4000 PSI HIGH & 250 PSI LOW, RU WORK FLOOR & TBG TONGS, RELEASE 7" TAC, POOH LD TBG HANGER & PERF SUB
	14:00 15:30	1.50	WLWORK	21		P		RU W.L. RIH & PERF TBG @ 2800', POOH RD W.L. FLUSH TBG W/ 20 BBLS 2% KCL
	15:30 17:00	1.50	WOR	39		P		RU TBG SCANNERS, SCAN OUT OF HOLE W/ 85 JTS 2-7/8" EUE L-80 TBG TO RODS, RODS WERE BACKED OFF POOH W/ 21-7/8" RODS TO BACK OFF, POOH SCANNING 16 JTS 2-7/8" TBG TO RODS, SECURE WELL CLOSE & LOCK PIPE RAMS BARRIER 2, CLOSE & NIGHT CAP TIW VALVE BARRIER 1 & 2, CLOSE & NIGHT CAP CSG VALVES BARRIER 1 & 2, SDFN
11/30/2016	6:00 7:00	1.00	WOR	28		P		CT HOLD SAFETY MTG ON BACKING RODS OFF WRITE & REVIEW JSA'S
	7:00 10:30	3.50	WOR	39		P		SICP 50 PSI, SITP 0 PSI, BLOW DWN CSG, RU BACK OFF TOOL, BACK OFF RODS, POOH W/ 71-7/8", 117-3/4" RODS LD 60 3/4" RODS, LD 13 WT BARS TO THE BACK OFF
	10:30 12:30	2.00	WLWORK	21		P		RU W.L. RIH W/ TBG PUNCHER TAG TOP OF WT BARS @ 5030', PU & PERF TBG @ 5025', POOH RDMO W.L.

## 2.1 Operation Summary (Continued)

Date	Time Start-End	Duration (hr)	Phase	Activity Code	Sub	OP Code	MD from (ft)	Operation
	12:30 16:30	4.00	WOR	39		P		RU TBG SCANNERS CONT POOH SCANNING 171 JTS 2-7/8" TBG, LD 7" TAC, TO TOP OF WT BARS, STRIP OUT 5 1-1/2" WT BARS, 3 JTS 2-7/8" TBG, 1 JT 2-7/8" TBG W/ PUMP STUCK IN IT, LD 5-1/2" PBGA, 2 JTS 2-7/8" TBG & 5-3/4" SOILID NO-GO  257 TOTAL JTS SCANNED 229 JTS YELLOW BAND 26 JTS BLUE BAND 2 JTS RED BAND  SECURE WELL, WELL BORE FLUID KEEPING WELL DEAD BARRIER 1, CLOSE & LOCK BLIND RAMS BARRIER 2, CLOSE & NIGHT CAP CSG VALVES BARRIER 1 & 2, SDFN
12/1/2016	6:00 7:00	1.00	WOR	28		P		CT HOLD SAFETY MTG ON WIRE LINE OPERATIONS, WRITE & REVIEW JSA'S
	7:00 13:00	6.00	WLWORK	26		P		MIRU W.L. & LUBRICATOR, TEST LUBE AGAINST BLIND RAMS W. HOT OILER TO 250 PSI GOOD TEST, MU & RIH W/ 4" O.D. GR/JB TO 8945', POOH RIH W/ 5.9 O.D. GR/JB TO 5" LT @ 8667', POOH RIH W/ KLX 15K COMPOSITE PLUG & SET @ 8930' (5" CSG COLLAR @ 8940') POOH RIH & DUMP BAIL 15' CMT ON TOP OF CBP, POOH RDMO W.L.
	13:00 14:30	1.50	WOR	16		P		MU 7" TBG HANGER W/ 2 WAY CHECK LAND TBG HANGER IN LANDING BOWL, RD WORK FLOOR, NDBOP, NU 10K FRAC VALVE & NIGHT CAP, SECURE WELL PLUG & CMT BARRIER 1, CLOSE FRAC VALVE BARRIER 2, CLOSE & NIGHT CAP CSG VALVES BARRIER 1 & 2, SDFN
12/2/2016	6:00 7:00	1.00	WOR	28		P		CT HOLD SAFETY MTG ON NU & TESTING FRAC STACK, WRITE & REVIEW JSA'S
	7:00 12:00	5.00	WOR	16		P		0 PSI ON WELL, TEST FRAV VALVE TO 8500 PSI & 250 PSI LOW GOOD TEST, PULL HANGER W/ 2 WAY CHECK, FILL CSG W/ 220 BBLS 2% KCL, TEST CSG TO 8000 PSI FOR 30 MIN GOOD TEST, CONT NU & TESTING FRAC STACK, RUN FLOW BACK LINES & TEST TO 8000 PSI
	12:00 14:30	2.50	WLWORK	21		P		RU W.L. TEST LUBRICATOR TO 4000 PSI & 250 PSI LOW GOOD TEST, RIH & PERF STG 1 PERFS 8866' TO 8707 USING 3-1/8" GUNS 22.7 GRM CHARGES 3 JSPF @ 120 DEG PHASING, STARTING PRESSURE 1000 PSI ENDING PRESSURE 300 PSI, ALL PERFS CORRELATED TO CUTTERS W.L. CBL LOG DATED 3/9/2015, POOH CLOSE BTM HCR VALVE, LD GUNS, FRAC VALVE SHUT BARRIER 1, 2 HCR VALVES SHUT & LOCKED BARRIER 2, CSG VALVES CLOSED & NIGHT CAPPED, SDFN
12/3/2016	6:00 10:00	4.00	WOR	18		P		WAIT ON TOPS FRAC EQUIP TO SHOW UP ON LOC, HOLD SAFETY MTG ON RU FRAC EQUIP
	10:00 18:00	8.00	MIRU	01		P		SPOT IN & RU TOPS FRAC EQUIP
	18:00 20:00	2.00	STG01	35		P		PRESSURE TEST LINES TO 9350 PSI. SICP 460 PSI. BREAK DOWN STAGE 1 PERFS @ 3422 PSI, 5.1 BPM. TREATED PERFS W/ 7000 GALS 15% HCL ACID. AVG RATE 25 BPM, MAX RATE 41 BPM, AVG PRESS 2350 PSI. MAX PRESS 5020 PSI. I.S.I.P 3047 PSI F.G. 78. 5 MINUTE 2723 PSI, 10 MINUTE 2503 PSI, 15 MINUTE 2341 PSI. PUMPED 7000 LBS 100 MESH SAND IN 1/2 PPG STAGE AND 100480 LBS WHITE 30/50 SAND IN 1PPG, .5 PPG, 1.PPG, 1.75 PPG, 2.5 PPG STAGES. AVG RATE 69.1 BPM, MAX RATE 74.8 BPM. AVG PRESS 4961 PSI, MAX PRESS 6357 PSI. I.S.I.P. 3410 PSI F.G. .82. 3638 BBLS TO RECOVER TURNED WELL OVER TO WIRELINE.

## 2.1 Operation Summary (Continued)

Date	Time Start-End	Duration (hr)	Phase	Activity Code	Sub	OP Code	MD from (ft)	Operation
	20:00 22:00	2.00	STG02	21		P		PRESSURE TEST LUBRICATOR TO 4000 PSI. RIH & SET 5" CBP @ 8698'. PERFORATE STAGE 2 PERFORATIONS 8664' TO 8563', USING 3-1/8" TAG RTG GUNS, 22.7 GRAM CHARGES, 3 JSPF, 120 DEGREE PHASING. STARTING PRESSURE 2500 PSI, ENDING PRESSURE 2450 PSI, ALL PERF CORRELATED TO CUTTERS CBL LOG DATED 3/9/2015, POOH W/ W.L., SHUT IN BTM HCR VALVE, LD GUN, SECURE WELL, BTM HCR VALVE CLOSED & LOCKED BARRIER 1, TOP HCR VALVE CLOSED & LOCKED BARRIER 2, CSG VALVES CLOSED & NIGHT CAPPED BARRIER 1 & 2, SDFN
12/4/2016	6:00 7:00	1.00	WOR	28		P		CT HOLD SAFETY MTG ON FRAC & W.L. OPERATIONS WRITE & REVIEW JSA'S, START & WARM UP EQUIP
	7:00 9:00	2.00	STG02	35		P		PRESSURE TEST LINES TO 9540 PSI. OPEN WELL @ 1839 PSI. BREAK DOWN STAGE 2 PERFS @ 3499 PSI, 6.7 BPM. TREATED PERFS W/ 6000 GALS 15% HCL ACID. I.S.I.P 2933 PSI, F.G. 77, 5 MINUTE 2653 PSI, 10 MINUTE 2560 PSI, 15 MINUTE 2514 PSI. PUMPED 6000 LBS 100 MESH SAND IN 1/2 PPG STAGE AND 65,000 LBS WHITE 30/50 SAND IN .5 PPG, 1.PPG, 1.75 PPG, 2.5 PPG STAGES. AVG RATE 67.5 BPM, MAX RATE 77.4 BPM. AVG PRESS 4805 PSI, MAX PRESS 5432 PSI. I.S.I.P. 3308 PSI F.G. .81. 2932 BBLS TO RECOVER TURNED WELL OVER TO WIRELINE.
	9:00 11:00	2.00	STG03	21		P		PRESSURE TEST LUBRICATOR TO 4000 PSI. RIH & SET 7" CBP @ 8492'. PERFORATE STAGE 3 PERFORATIONS FROM 8477' TO 8368', USING 3-1/8" TAG RTG GUNS, 22.7 GRAM CHARGES, 3 JSPF, 120 DEGREE PHASING, STARTING PRESSURE 2400 PSI, ENDING PRESSURE 2100 PSI, ALL PERFS CORRELATED TO CUTTER'S CBL LOG DATED 3/9/2015, POOH SWI & TURN OVER TO FRAC
	11:00 12:30	1.50	STG03	35		P		PRESSURE TEST PUMP LINES TO 9519 PSI, OPEN WELL @ 2212 PSI, BREAK DWN STG 3 PERFS @ 4341 PSI @ 9.3 BPM, PUMPED A TOTAL OF 107 BBLS WTR, PERFORM STEP RATE DWN TEST, ISIP 2620 PSI, F.G. .74, 5 MIN 2521 PSI, 10 MIN 2493 PSI, 15 MIN 2467 PSI, TREAT PERFS W/ 12,000 GALS 15% HCL ACID DROPPING 44 BIO BALLS TOTAL IN 4 DROPS & FLUSH 10 BBLS PAST BTM PERF, ISIP 2537 PSI, F.G. .75, 5 MIN 2537 PSI, 10 MIN 2506 PSI, 15 MIN 2484 PSI, MAX PRESSURE 6200 PSI, AVG PRESSURE 3968 PSI, MAX RATE 49.8 BPM, AVG RATE 36.9 BPM, CLOSE WELL IN & TURN OVER TO W.L. 778 BBLS TO RECOVER
	12:30 13:30	1.00	STG04	21		P		PRESSURE TEST LUBRICATOR TO 4000 PSI. RIH & SET 7" CBP @ 8267'. PERFORATE STAGE 4 PERFORATIONS FROM 8252' TO 8168', USING 3-1/8" TAG RTG GUNS, 22.7 GRAM CHARGES, 3 JSPF, 120 DEGREE PHASING, STARTING PRESSURE 2300 PSI, ENDING PRESSURE 1800 PSI, ALL PERFS CORRELATED TO CUTTER'S CBL LOG DATED 3/9/2015, POOH SWI & TURN OVER TO FRAC
	13:30 14:45	1.25	STG04	35		P		PRESSURE TEST PUMP LINES TO 9560 PSI, OPEN WELL @ 1567 PSI, BREAK DWN STG 4 PERFS @ 2416 PSI @ 8 BPM, PUMPED A TOTAL OF 87.9 BBLS WTR, PERFORM STEP RATE DWN TEST, ISIP 1929 PSI, F.G. .66, 5 MIN 1432 PSI, 10 MIN 1331 PSI, 15 MIN 1274 PSI, TREAT PERFS W/ 10,000 GALS 15% HCL ACID DROPPING 52 BIO BALLS TOTAL IN 4 DROPS & FLUSH 10 BBLS PAST BTM PERF, ISIP 1651 PSI, F.G. .63, 5 MIN 1416 PSI, 10 MIN 1307 PSI, 15 MIN 1220 PSI, MAX PRESSURE 7670 PSI, AVG PRESSURE 3273 PSI, MAX RATE 51 BPM, AVG RATE 31.3 BPM, CLOSE WELL IN & TURN OVER TO W.L. 687 BBLS TO RECOVER

## 2.1 Operation Summary (Continued)

Date	Time Start-End	Duration (hr)	Phase	Activity Code	Sub	OP Code	MD from (ft)	Operation
	14:45 17:00	2.25	STG05	21		P		PRESSURE TEST LUBRICATOR TO 4000 PSI. RIH & SET 7" CBP @ 7995'. PERFORATE STAGE 5 PERFORATIONS FROM 7980' TO 7748', USING 3-1/8" TAG RTG GUNS, 22.7 GRAM CHARGES, 3 JSPF, 120 DEGREE PHASING, STARTING PRESSURE 900 PSI, ENDING PRESSURE 700 PSI, ALL PERFS CORRELATED TO CUTTER'S CBL LOG DATED 3/9/2015, POOH SWI & TURN OVER TO FRAC
	17:00 19:00	2.00	STG05	35		P		PRESSURE TEST LINES TO 9580 PSI. OPEN WELL @ 336 PSI. BREAK DOWN STAGE 5 PERFS @ 2101 PSI, 7.3 BPM. TREATED PERFS W/ 8000 GALS 15% HCL ACID. I.S.I.P 1697 PSI, F.G. 65. 5 MINUTE 1577 PSI, 10 MINUTE 1426 PSI, 15 MINUTE 1264 PSI. PUMPED 8000 LBS 100 MESH SAND IN 1/2 PPG STAGE AND 122300 LBS WHITE 30/50 SAND IN .5 PPG, 1.PPG, 1.50 PPG, 2 PPG & 3 PPG STAGES. AVG RATE 71.7 BPM, MAX RATE 76.6 BPM. AVG PRESS 2605 PSI, MAX PRESS 3000 PSI. I.S.I.P. 2059 PSI F.G. .69. 3841 BBLs, CLOSE IN & LOCK BTM HCR VALVE BARRIER 1, CLOSE IN & LOCK TOP HCR VALVE BARRIER 2, CSG VALVES CLOSED & CAPPED
	19:00 22:00	3.00	RDMO	02		P		RDMO FRAC & W.L. EQUIP, NU 10K NIGHT CAP ON TOP OF STACK
	22:00 6:00	8.00	FB	19		P		TWOTFB, OPEN WELL UP TO FLOW BACK TANK @ 1000 PSI, ON 12/64 CHOKE FLOWED BACK 227 BBLs WATER, CURRENT PRESSURE 500 PSI
12/5/2016	6:00 6:00	24.00	FB	19		P		HOLD SAFETY MTG ON TURNING WELL TO PROD FACILITY WRITE & REVIEW JSA'S, WELL FLOWING BACK TO PROD FACILITY ON 16/64 CHOKE, MADE 129 BBLs OIL & 448 BBLs WTR, GAS FLARING, CURRENT PRESSURE 50 PSI
12/6/2016	7:00 8:00	1.00	WOR	28		P		CT HOLD SAFETY MTG ON ND FRAC STACK & NU BOP, WRITE & REVIEW JSA'S
	8:00 13:30	5.50	WOR	16		P		50 PSI ON CSG, RU & PUMP 200 BBLs BRINE DWN CSG, WATCH WELL FOR 30 MIN WELL ON VACUME, ND 10K NIGHT CAP, TOP HCR VALVE, GOAT HEAD & BTM HCR VALVE, NU & TEST 5K BOP & ANNULAR ON TOP OF 7" MASTER VALVE, TEST 4000 PSI HIGH & 250 PSI LOW GOOD TEST, RU WORK FLOOR & TBG TONGS
	13:30 16:00	2.50	WOR	39		P		MU & RIH W/ 6" ROCK BIT, 2-7/8" X 3-1/2" REG BIT SUB & TIH TALLYING TBG OUT OF DERRICK W/ 328 JTS 2-7/8" EUE L-80 TBG, TALLY & PICK UP 8 JTS 2-7/8" EUE L-80 TBG, EOT @ 7708', SECURE WELL, SHUT & NIGHT CAP TIW VALVE BARRIER 1 & 2, CLOSE & LOCK PIPE RAMS BARRIER 1, CLOSE ANNULAR BARRIER 2, CLOSE & NIGHT CAP CSG VALVES BARRIER 1 & 2, SDFN
12/7/2016	6:00 7:00	1.00	WOR	28		P		CT HOLD SAFETY MTG ON RU POWER SWIVEL, WRITE & REVIEW JSA'S
	7:00 9:30	2.50	WOR	15		P		SITP 350 PSI, SICP 450 PSI, BLOW DWN TBG TO FLOW BACK TANK, PUMP 15 BBLs 10# BRINE DWN TBG, PU & RIH W/ 10 JTS 2-7/8" TBG TAG SAND @ 8025', RU POWER SWIVEL
	9:30 16:30	7.00	WOR	10		P		BREAK CIRC W/ 65 BBLs 2% KCL, CLEAN OUT 7' SAND & TAG 7" CBP @ 8032' TBGM, DRILL OUT CBP, CIRC CLEAN, PUMP 10 BBLs BRINE DWN TBG, SWIVEL IN HOLE W/ 9 JTS 2-7/8" TBG, TAG SAND @ 8277', CLEAN OUT 35' SAND TAG 7" CBP @ 8312' TBGM, DRILL OUT 7" CBP CIRC CLEAN PUMP 10 BBLs BRINE DWN TBG, SWIVEL DWN 7 JTS 2-7/8" TBG TAG 7" CBP @ 8532' TBGM, DRILL OUT 7" CBP CIRC CLEAN PUMP 10 BBLs BRINE DWN TBG, SWIVEL DWN 6 JTS 2-7/8" TBG, DRILL OUT 7" CBP REMAINS ON LINER TOP, CIRC TBG CLEAN PUMP 20 BBLs BRINE DWN TBG

## 2.1 Operation Summary (Continued)

Date	Time Start-End	Duration (hr)	Phase	Activity Code	Sub	OP Code	MD from (ft)	Operation
	16:30 17:30	1.00	WOR	39		P		RD POWER SWIVEL, TOO H W/ 32 JTS 2-7/8" EUE L-80 TBG, EOT @ 7708', SECURE WELL, CLOSE & LOCK PIPE RAMS BARRIER 1, SHUT HYDRILL BARRIER 2, CLOSE & NIGHT CAP TIW VALVE BARRIER 1 & 2, CLOSE & NIGHT CAP CSG VALVES BARRIER 1 & 2, DRAIN PUMP & PUMP LINES SDFN
12/8/2016	6:00 7:00	1.00	WOR	28		P		CT HOLD SAFETY MTG ON TOO H W/ TBG, WRITE & REVIEW JSA'S
	7:00 9:00	2.00	WOR	15		P		SICP 50 PSI, SITP 50 PSI, RU & CIRC WELL BORE W/ 270 BBLs BRINE WTR
	9:00 11:30	2.50	WOR	39		P		TOOH W/ 236 JTS 2-7/8" EUE L-80 TBG, BIT SUB & 6" ROCK BIT
	11:30 14:30	3.00	WOR	39		P		MU & RIH W/ 4-1/8" ROCK BIT, BIT SUB, PU 10 JTS 2-3/8" TBG, 2-7/8" EUE X 2-3/8" EUE X OVER & 258 JTS 2-7/8" TBG TAG @ 8712' TBGM
	14:30 17:00	2.50	WOR	10		P		RU POWER SWIVEL, BREAK CIRC W/ 42 BBLs 2% KCL, CONT DRILLING OUT 7" CBP REMAINS CIRC CLEAN, RIH TAG 5" CBP @ 8743', DRILL OUT 5" CBP RIH & CLEAN OUT TO NEW PBD @ 8915' (TBGM 8960') CIRC TBG CLEAN, PUMP 20 BBLs BRINE DWN TBG, RD POWER SWIVEL
	17:00 18:00	1.00	WOR	24		P		POOH LD 39 JTS 2-7/8" EUE L-80 TBG, EOT @ 7730', SECURE WELL, CLOSE & LOCK PIPE RAMS BARRIER 1, CLOSE HYDRILL BARRIER 2, CLOSE & NIGHT CAP TIW VALVE BARRIER 1 & 2, CLOSE & NIGHT CAP CSG VALVES BARRIER 1 & 2, SDFN
12/9/2016	6:00 7:30	1.50	WOR	28		P		CREW TRAVEL HELD SAFETY MEETING ON WELL CONTROL. FILLED OUT AND REVIEWED JSA.
	7:30 9:00	1.50	WOR	06		P		250 CSIP 275 TSIP. BLED OUT GAS. EOT 7730' CIRCULATE WELL W 290 BBLs BRINE, WELL DIED.
	9:00 12:00	3.00	WOR	39		P		TOOH W/ 200-JTS 2 7/8 L-80 EUE TBG, X-OVER, 10-JTS 2 3/8 L-80 EUE TBG, BIT SUB AND 4 1/8 BIT.
	12:00 17:00	5.00	WOR	39		P		RU HYDRO TESTER. RIH W/ 5 3/4 SOLID NO-GO, 5 1/2 PBGA, 4' 2 7/8 SUB, 2' 27/8 SUB, MECH SN, 2 1/4 TUBING PUMP BARREL, 4-2 7/8 SUB, 4-JTS 2 7/8 L-80 EUE TBG, KLX TAC 125-JTS 2 7/8 L-80 TUBING HYDRO TESTING @ 8500 PSI. TOOLS GOT STUCK IN TBG. PULLED TOOL W/ RIG, RIH W/ 60-JTS FLUSHED TBG, SDFN. LOSE & LOCK PIPE RAMS BARRIER 1, CLOSE HYDRILL BARRIER 2, CLOSE & NIGHT CAP TIW VALVE BARRIER 1 & 2, CLOSE & NIGHT CAP CSG VALVES BARRIER 1 & 2, SDFN
12/10/2016	6:00 7:30	1.50	WOR	28		P		CREW TRAVEL HELD SAFETY MEETING ON TRIPPING TUBING. FILLED OUT AND REVIEWED JSA.
	7:30 12:30	5.00	INSTUB	39		P		0 TSIP, 300 CSIP, BLED GAS OF CSG. WELL DIED. TOO H W/ 40-JTS 2 7/8 L-80 EUE TBG. RU HYDROTESTER. RIH HYDRO TESTING @ 8500 PSI W/ 120-JTS 2 7/8 L-80 EUE TBG FOUND NO LEAKS. RD HYDRO TESTER. SET TAC @ 7328', SN 7505' AND EOT @ 7610'.
	12:30 14:30	2.00	WOR	16		P		LANDE TBG W/ TBG SUB AND HANGER LANDING JT W/ TIW VALVE. ND 5K HYDRIL, 5K BOP AND 10K MASTER VALVE. NU WELLHEAD AND FLOW LINES,
	14:30 16:00	1.50	WOR	06		P		FLUSHED TBG W/ 45 BBLs KCL, 20 BBLs BRINE, DROPPED STANDING VALVE. PUMPED 20 BBLs BRINE 10 GALS CORROSION INHIBITOR AND 25 BBLs BRINE STANDING VALVE DIDN'T SEAT.
	16:00 17:30	1.50	INARTLT	39		P		RIH W/ 2 1/4' X 5' PLUNGER, POLISH ROD, STAB SUB, 39-1 1/2 WIEGHT BARS AND 30 3/4 RODS. PU PLISH ROD CLOSED IN WELL. TBG BARRIER 1 KILL FLUID, BARRIER 2 STUFFING BOX. CSG OPEN TO TREATER ON 20/64 CHOKE. SDFN.
12/11/2016	6:00 7:00	1.00	INARTLT	28		P		CREW TRAVEL, SAFETY MEETING, FILL OUT AND REVIEW JSA
	7:00 7:15	0.25	INARTLT	17		P		TSIP 0 PSI, CASING TURNED TO TREATOR @ 45 PSI

## 2.1 Operation Summary (Continued)

Date	Time Start-End	Duration (hr)	Phase	Activity Code	Sub	OP Code	MD from (ft)	Operation
	7:15 11:00	3.75	INARTLT	03		P		TIH W/26-3/4" RODS, 115- 7/8" RODS( 82 RERUN AND 33 NEW), 96 1" RODS (33 W/6 GUIDES, 3 NEW W/ 4 GUIDES AND 60 SLK. SPACE OUT TUBING PUMP AND PICK UP POLISH ROD W/ NO SUBS
	11:00 11:30	0.50	INARTLT	18		P		FILL TUBING W/ 5 BBLs 2% KCL AND TEST TUBING TO 1000 PSI. TEST GOOD GOOD PUMP ACTION. PUMP 30 BBLs 2% KCL UP FLOWLINE
	11:30 13:30	2.00	RDMO	02		P		RIG DOWN RIG AND ASSOCIATED EQUIPMENT. SLIDE ROTOFLEX IN AND HANG OFF RODS. TURN WELL OVER TO PRODUCTION





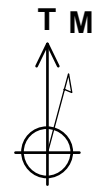
**Ryan Directional Services  
Directional Drilling Report**

**Field: Duchesne Co, UT  
Site: Anderson 2-21C4  
Well: 2-21C4  
Wellpath: Wellbore #1**

**Prepared For:**

**EP ENERGY** 

**Ryan Directional Services  
19510 Oil Center BLVD.  
Houston, TX 77073  
Ph: 281-443-1414  
Fx: 281-443-1476  
[www.nabors.com](http://www.nabors.com)**



Azimuths to True North  
Magnetic North: 11.12°

Magnetic Field  
Strength: 51824.7snT  
Dip Angle: 65.77°  
Date: 2/9/2015  
Model: BGGM2014

Project: Duchesne Co, UT  
Site: Anderson 2-21C4  
Well: 2-21C4  
Wellbore: Wellbore #1  
Design: Surveys

Site Centre Northing: 7247642.64  
Easting: 1962314.67

Positional Uncertainty: 0.00  
Convergence: 0.74  
Local North: True

Duchesne Co, UT

Geodetic System: US State Plane 1983

Datum: North American Datum 1983

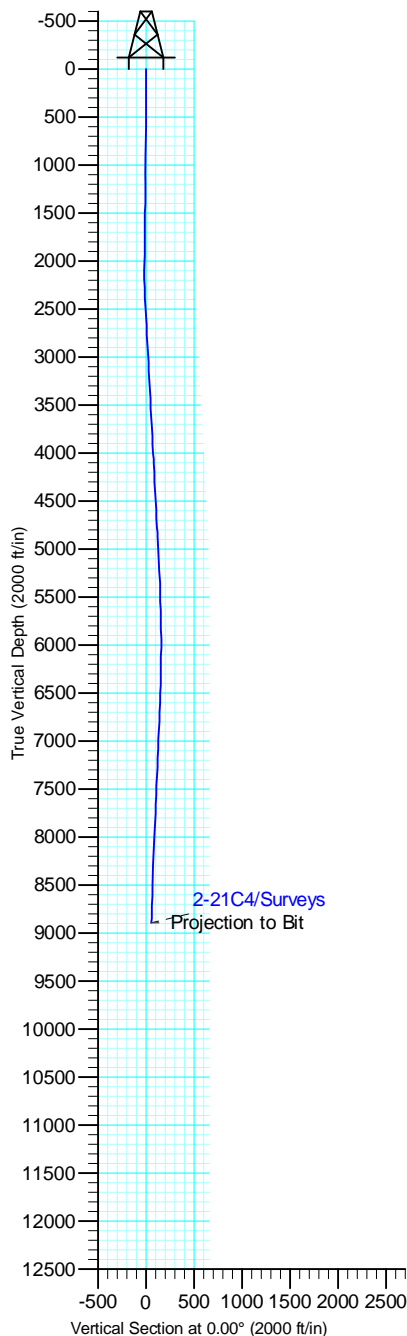
Ellipsoid: GRS 1980

Zone: Utah Central Zone

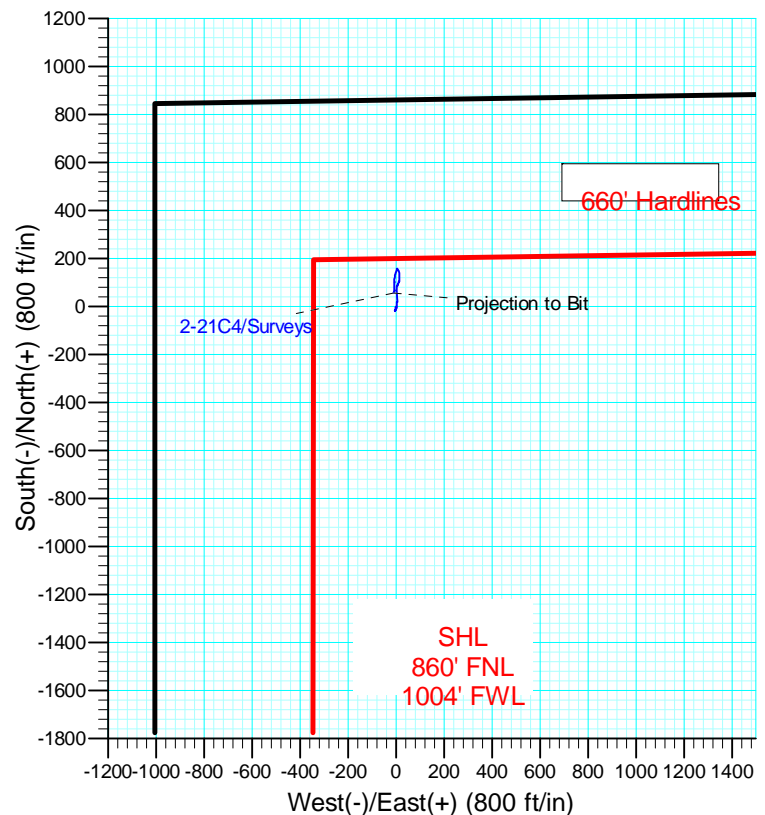
System Datum: Mean Sea Level

#### SECTION DETAILS

No plan data is available



ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation	
8893.04	8900.00	2.10	213.40	57.35	-9.89	57.35	309.51	Projection to Bit	





# RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

## SLIDE & ROTATING REPORT

Customer:

Field:

County, State:

EP Energy

Altamont Field

Duchesne, UT

Rig Name &amp; No.:

Well Name &amp; No.:

Ryan Job #:

Precision 406

Anderson 2-21 C4

8716

MODE	DEPTH FROM	DEPTH TO	FEET MADE	SURVEY DEPTH	INC	AZI	DLS	BUILD RATE	MOTOR OUTPUT	SLIDE SEEN	SLIDE AHEAD	DLN	SIDE / ROTATE (Based on Formula)	MTF / GTF	WOB (1K lbs)	RPM	PUMP GPM	PUMP PRESSURE
Rotate	2,034	2,067	33												21.00	50.00	475.00	870.00
Rotate	2,067	2,135	68	2,093	0.60°	207.30°	0.26°								21.00	60.00	305.00	870.00
Slide	2,135	2,150	15											10 MTF	15.00		305.00	870.00
Rotate	2,150	2,232	82	2,190	0.90°	15.20°	1.54°								21.00	60.00	305.00	870.00
Slide	2,232	2,244	12											10 MTF	17.00		305.00	870.00
Rotate	2,244	2,328	84	2,286	2.20°	35.50°	1.45°								26.00	60.00	508.00	1080.00
Slide	2,328	2,338	10											0 MTF	18.00		508.00	1080.00
Rotate	2,338	2,424	86	2,382	3.40°	25.00°	1.35°								31.00	60.00	508.00	1080.00
Rotate	2,424	2,520	96	2,478	3.10°	19.80°	0.44°								31.00	60.00	508.00	1080.00
Slide	2,520	2,526	6											0 MTF	18.00		508.00	1080.00
Rotate	2,526	2,616	90	2,574	3.30°	6.70°	0.74°								28.00	60.00	508.00	1080.00
Rotate	2,616	2,712	96	2,670	2.80°	359.60°	0.65°								28.00	60.00	508.00	1080.00
Slide	2,712	2,722	10											0 MTF	18.00		528.00	2300.00
Rotate	2,722	2,809	87	2,767	3.30°	5.00°	0.59°								28.00	60.00	528.00	2300.00
Rotate	2,809	2,905	96	2,863	2.70°	0.40°	0.67°								28.00	60.00	528.00	2300.00
Slide	2,905	2,915	10											0 MTF	18.00		528.00	2300.00
Rotate	2,915	3,000	85	2,958	3.30°	4.90°	0.68°								28.00	60.00	528.00	2300.00
Rotate	3,000	3,096	96	3,054	2.50°	4.60°	0.83°								28.00	60.00	528.00	2300.00
Slide	3,096	3,108	12											0 MTF	18.00		528.00	2300.00
Rotate	3,108	3,192	84	3,150	3.10°	2.30°	0.64°								28.00	60.00	528.00	2300.00
Slide	3,192	3,204	12											0 MTF	18.00		528.00	2300.00
Rotate	3,204	3,289	85	3,247	3.90°	350.20°	1.12°								28.00	60.00	528.00	2300.00
Rotate	3,289	3,384	95	3,342	3.00°	340.90°	1.11°								28.00	60.00	528.00	2300.00
Slide	3,384	3,394	10											0 MTF	18.00		528.00	2300.00
Rotate	3,394	3,481	87	3,439	3.20°	354.80°	0.80°								31.00	60.00	528.00	2300.00
Slide	3,481	3,489	8											0 MTF	15.00		528.00	2300.00
Rotate	3,489	3,577	88	3,535	3.80°	3.90°	0.85°								31.00	60.00	528.00	2300.00
Rotate	3,577	3,673	96	3,631	2.90°	353.90°	1.11°								31.00	60.00	528.00	2300.00
Slide	3,673	3,683	10											0 MTF	15.00		528.00	2300.00
Rotate	3,683	3,769	86	3,727	2.70°	356.80°	0.26°								31.00	60.00	528.00	2300.00
Slide	3,769	3,779	10											0 MTF	15.00		528.00	2300.00
Rotate	3,779	3,865	86	3,823	3.10°	351.40°	0.50°								31.00	60.00	528.00	2300.00
Slide	3,865	3,875	10											0 MTF	15.00		528.00	2300.00
Rotate	3,875	3,961	86	3,919	3.00°	356.90°	0.32°								31.00	60.00	528.00	2300.00
Slide	3,961	3,976	15											0 MTF	19.00		528.00	2300.00
Rotate	3,976	4,058	82	4,016	3.90°	14.00°	1.40°								31.00	60.00	528.00	2300.00
Rotate	4,058	4,154	96	4,112	2.70°	16.70°	1.26°								31.00	60.00	528.00	2300.00
Slide	4,154	4,169	15											0 MTF	19.00		528.00	2300.00
Rotate	4,169	4,250	81	4,208	2.70°	24.40°	0.38°								31.00	60.00	528.00	2300.00
Slide	4,250	4,265	15											0 MTF	19.00		528.00	2400.00
Rotate	4,265	4,347	82	4,305	3.20°	12.50°	0.81°								31.00	60.00	528.00	2400.00
Slide	4,347	4,362	15											0 MTF	19.00		528.00	2400.00
Rotate	4,362	4,443	81	4,401	2.90°	27.10°	0.86°								31.00	60.00	528.00	2400.00
Slide	4,443	4,461	18											0 MTF	13.00		528.00	2400.00
Rotate	4,461	4,539	78	4,497	3.30°	32.10°	0.50°								31.00	60.00	528.00	2400.00
Slide	4,539	4,557	18											330 MTF	14.00		528.00	2500.00
Rotate	4,557	4,635	78	4,593	3.10°	3.30°	1.67°								31.00	60.00	528.00	2500.00
Slide	4,635	4,653	18											0 MTF	12.00		528.00	2500.00
Rotate	4,653	4,730	77	4,688	3.00°	11.30°	0.46°								31.00	60.00	528.00	2500.00
Slide	4,730	4,748	18											0 MTF	19.00		528.00	2500.00
Rotate	4,748	4,826	78	4,784	3.70°	5.80°	0.80°								31.00	60.00	528.00	2500.00
Rotate	4,826	4,923	97	4,881	1.90°	354.60°	1.93°								31.00	60.00	528.00	2500.00
Slide	4,923	4,941	18											0 MTF	19.00		528.00	2500.00
Rotate	4,941	5,017	76	4,975	3.30°	4.10°	1.55°								31.00	60.00	528.00	2500.00
Slide	5,017	5,029	12											0 MTF	19.00		528.00	2500.00
Rotate	5,029	5,113	84	5,071	2.50°	353.50°	1.00°								31.00	60.00	528.00	2500.00
Slide	5,113	5,131	18											0 MTF	19.00		528.00	2500.00
Rotate	5,131	5,209	78	5,167	3.80°	356.90°	1.37°								31.00	60.00	528.00	2500.00
Rotate	5,209	5,305	96	5,263	3.50°	347.20°	0.71°								31.00	60.00	528.00	2500.00
Rotate	5,305	5,402	97	5,360	2.40°	338.60°	1.22°								31.00	60.00	528.00	2500.00
Rotate	5,402	5,498	96	5,456	2.30°	326.40°	0.53°								31.00	60.00	528.00	2500.00
Rotate	5,498	5,595	97	5,553	1.40°	307.50°	1.11°								31.00	60.00	528.00	2500.00
Slide	5,595	5,613	18											30 MTF	19.00		528.00	2500.00
Rotate	5,613	5,690	77	5,648	1.50°	353.00°	1.18°								31.00	60.00	528.00	2500.00
Rotate	5,690	5,786	96	5,744	0.90°	328.80°	0.81°								31.00	60.00	528.00	2500.00
Slide	5,786	5,794	8											10 MTF	19.00		528.00	2500.00
Rotate	5,794	5,883	89	5,841	1.10°	358.90°	0.57°								31.00	60.00	528.00	2500.00
Rotate	5,883	5,979	96	5,937	0.40°	291.20°	1.06°								31.00	60.00	528.00	2500.00
Rotate	5,979	6,076	97	6,034	0.50°	243.30°	0.39°								31.00	60.00	528.00	2500.00
Rotate	6,076	6,171	95	6,129	0.60°	199.80°	0.44°								31.00	60.00	528.00	2500.00
Rotate	6,171	6,267	96	6,225	1.10°	209.20°	0.54°								31.00	60.00	528.00	2500.00
Rotate	6,267	6,363	96	6,321	1.20°	194.20°	0.33°								31.00	60.00	528.00	2500.00
Rotate	6,363	6,460	97	6,418	1.30°	200.30°	0.17°								31.00	60.00	528.00	2500.00
Rotate	6,460	6,556	96	6,514	1.90°	196.00°	0.64°								31.00	60.00	528.00	2500.00
Rotate	6,556	6,652	96	6,610	2.10°	203.20°	0.33°								31.00	60.00	528.00	2500.00



**RYAN DIRECTIONAL SERVICES, INC.**

A NABORS COMPANY

## SLIDE & ROTATING REPORT

**Customer:**

**Field:**

County, State:

**EP Energy**

### Altamont Field

Duchesne, UT

Rig Name &amp; No.:

Well Name &amp; No.:

Ryan Job #:

## Precision 406

Anderson 2-21 C4

8716

MODE	DEPTH FROM	DEPTH TO	FEET MADE	SURVEY DEPTH	INC	AZI	DLS	BUILD RATE	MOTOR OUTPUT	SLIDE SEEN	SLIDE AHEAD	DLN	SIDE / ROTATE (Based on Formula)	MTF / GTF	WOB (1K lbs)	RPM	PUMP GPM	PUMP PRESSURE
Rotate	6,652	6,748	96	6,706	2.10°	197.30°	0.23°								31.00	60.00	528.00	2500.00
Rotate	6,748	6,844	96	6,802	2.50°	198.20°	0.42°								31.00	60.00	508.00	2500.00
Rotate	6,844	6,939	95	6,897	2.90°	191.00°	0.55°								31.00	60.00	508.00	2500.00
Slide	6,939	6,949	10											0 MTF	29.00		508.00	2500.00
Rotate	6,949	7,035	86	6,993	2.50°	190.90°	0.42°								31.00	60.00	508.00	2500.00
Rotate	7,035	7,131	96	7,089	2.90°	184.30°	0.53°								31.00	60.00	508.00	2500.00
Slide	7,131	7,146	15											0 MTF	22.00		508.00	2500.00
Rotate	7,146	7,228	82	7,186	2.10°	199.20°	1.06°								31.00	60.00	508.00	2500.00
Rotate	7,228	7,324	96	7,282	2.60°	202.90°	0.54°								31.00	60.00	508.00	2500.00
Rotate	7,324	7,420	96	7,378	2.80°	190.40°	0.65°								31.00	60.00	508.00	2500.00
Slide	7,420	7,435	15											10 MTF	17.00		508.00	2500.00
Rotate	7,435	7,516	81	7,474	2.90°	173.00°	0.90°								31.00	60.00	508.00	2500.00
Slide	7,516	7,532	16											350 MTF	21.00		508.00	2500.00
Rotate	7,532	7,611	79	7,569	2.30°	167.80°	0.68°								31.00	60.00	508.00	2500.00
Rotate	7,611	7,707	96	7,665	2.00°	176.50°	0.46°								31.00	60.00	508.00	2500.00
Rotate	7,707	7,802	95	7,760	2.20°	194.50°	0.72°								31.00	60.00	508.00	2500.00
Rotate	7,802	7,898	96	7,856	2.50°	185.90°	0.48°								31.00	60.00	508.00	2500.00
Rotate	7,898	7,993	95	7,951	2.50°	186.20°	0.01°								31.00	60.00	508.00	2500.00
Rotate	7,993	8,089	96	8,047	2.40°	181.80°	0.22°								31.00	60.00	508.00	2500.00
Rotate	8,089	8,185	96	8,143	2.50°	179.90°	0.13°								31.00	60.00	508.00	2500.00
Rotate	8,185	8,281	96	8,239	3.00°	180.50°	0.52°								31.00	60.00	494.00	2600.00
Slide	8,281	8,299	18											0 MTF	14.00		494.00	2600.00
Rotate	8,299	8,378	79	8,336	2.00°	168.40°	1.16°								31.00	60.00	494.00	2600.00
Rotate	8,378	8,473	95	8,431	2.80°	162.80°	0.88°								31.00	60.00	494.00	2600.00
Slide	8,473	8,493	20											340 MTF	14.00		494.00	2600.00
Rotate	8,493	8,569	76	8,527	0.30°	204.30°	2.69°								31.00	60.00	494.00	2600.00
Rotate	8,569	8,665	96	8,623	0.80°	173.50°	0.59°								31.00	60.00	494.00	2600.00
Rotate	8,665	8,761	96	8,719	2.50°	199.20°	1.89°								31.00	60.00	460.00	2600.00
Slide	8,761	8,775	14											10 MTF	14.00		460.00	2600.00
Rotate	8,775	8,858	83	8,816	2.10°	207.30°	0.53°								31.00	60.00	460.00	2600.00
Rotate	8,858	8,890	32												31.00	60.00	460.00	2600.00
Slide	8,890	8,900	10											20 MTF	14.00		460.00	2600.00
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Report #: 1

Date: 11-Feb-15



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 8716

## DAILY DRILLING REPORT

Oil Company: EP Energy  
 Field: Altamont Field  
 County, State: Duchesne, UT  
 AFE or PO #: 160118

Customer: EP Energy  
 Well Name & No.: Anderson 2-21 C4  
 Block or Section: Sec 21-T3S-R4W  
 Rig Contractor & No.: Precision 406

00:00 Depth: 2034  
 24:00 Depth: 2809

Footage Today: 775  
 Current Run Ftg: 775

Drig Hrs Today: 5.50  
 Run Drig Hrs: 5.50

ROP Today: 140.91  
 Run Avg. ROP: 140.91

Last Casing Set: 9 5/8  
 Depth: 2034

PUMP Data Total Gals/Min = 528				MUD DATA		Previous	BHA #	Current	1	BHA #	MOTOR DATA	CURRENT
Pump	Pump 1	Pump 2	0	Mud Type				Bit			Run No.	1
Liner (in)	5	5		Sample	IN			Motor			Size (in.)	6 3/4
%	95	95		Time				EM MWD			Type	7/8 5.0 Stage
Vol (gals)	2.42	2.42	0.00	Wt.				UBHO Sub			Serial No.	RY675090
SPM	109	109		VIS				NMDC (MWD)			Tool Deflection	1.5 FBH
DRILLING PARAMETERS				PV				NMDC			Avg. Diff. Press.	
ST. WT. ROT 1000's:		105		YP				X-O Sub			Daily Drill Hrs.	5.50
P/U WT. 1000's:		110		WL				16 Jnts 6 1/2" DC's			Daily Circ. Hrs.	3.00
S/O WT. 1000's:		100		CL				9 Jnts 4 1/2" HWDP			Daily Total Hrs.	8.50
WOB 1000's:		21		Gels							Acc. Drill Hrs.	5.50
ROTARY RPM:		60		% Oil							Acc. Circ. Hrs.	3.00
MOTOR RPM:		148		% Solids							Depth In	2034
TOTAL Bit RPM		208		% Sand							Depth Out	
ROT TQ. OFF BTM:		1200		PH							LIH Hrs.	12:15
ROT TQ. ON BTM:		3100		Temp F				Total = 886.67'			Acc. LIH Hrs.	12.25
Current Mag Dec:		11.12		MWD F		BHA WT					Acc. Hrs Cir/Drilg	8.50
Pulse Height				GPM	528	BELOW JARS					Total K Revs	68.64
*G* Totals				PSI	2300						Jar # HRS	

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
1	8 3/4	Security	MM54D	12633472	5x13	2034													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown	Current Operations			
0:00	0:00	0:00				O	Ryan Personnel and Tools on location				
0:00	7:00	7:00				S	Standby (Test BOP)	Drill ahead in intermediate section			
7:00	8:00	1:00				S	Standby (Pick up drill collars)				
8:00	9:45	1:45				6.G	Pick up BHA #1				
9:45	10:00	0:15				MW	Test MWD tools - Test Failed				
10:00	10:15	0:15				MW	Troubleshoot EM MWD, run antenna to BOP				
10:15	10:30	0:15				MW	Test MWD tools - EM MWD test good				
10:30	10:45	0:15				6.G	Make up bit				
10:45	11:15	0:30				MW	Troubleshoot MWD, toolface doesnt match between MP and EM				
11:15	11:30	0:15				MW	Test MWD - Toolface still doesn't match				
11:30	11:45	0:15				MW	Wait on orders from MWD coordinator and engineer - run in hole	Estimated Daily Charges			
11:45	15:00	3:15				6.A	Trip in hole	Description		Cost	
15:00	16:00	1:00				3.A	Drill cement and float equipment				
16:00	16:15	0:15	2034	2067	33	2.A	Rotate; WOB-21, DP-475, GPM-518, RPM-50				
16:15	16:45	0:30				8	Work on pumps				
16:45	17:15	0:30	2067	2135	68	2.A	Rotate; WOB-21, DP-350, GPM-305, RPM-60				
17:15	17:30	0:15				10	C/S @ 2093; Inc-0.6, Azm-207.3, DLS-0.26				
17:30	18:00	0:30	2135	2150	15	2.B	Slide @ 10 MTF; WOB-15, DP-250, GPM-305				
18:00	18:30	0:30	2150	2232	82	2.A	Rotate; WOB-21, DP-350, GPM-305, RPM-60				
18:30	18:45	0:15				10	C/S @ 2190; Inc-0.9, Azm-15.2, DLS-1.54				
18:45	19:00	0:15	2232	2244	12	2.B	Slide @ 10 MTF; WOB-17, DP-300, GPM-305				
19:00	19:45	0:45	2244	2328	84	2.A	Rotate; WOB-26, DP-350, GPM-508, RPM-60				
19:45	20:00	0:15				10	C/S @ 2286; Inc-2.2, Azm-35.5, DLS-1.45	Estimated Daily Cost (USD)		\$	-
20:00	20:15	0:15	2328	2338	10	2.B	Slide @ 0 MTF; WOB-17, DP-300, GPM-508	Accumulated Cost (USD)		\$	-
20:15	20:45	0:30	2338	2424	86	2.A	Rotate; WOB-31, DP-600, GPM-508, RPM-60	Company Representative (s)			
20:45	21:00	0:15				10	C/S @ 2382; Inc-3.4, Azm-25.0, DLS-1.35	Tony Wilkerson			
21:00	21:30	0:30	2424	2520	96	2.A	Rotate; WOB-31, DP-600, GPM-508, RPM-60	Bill Owen			
21:30	21:45	0:15				10	C/S @ 2478; Inc-3.1, Azm-19.8, DLS-0.44	RYAN Directional Representative (s)			
21:45	22:00	0:15	2520	2526	6	2.B	Slide @ 0 MTF; WOB-17, DP-300, GPM-508	Andrew Biem			
22:00	22:15	0:15	2526	2616	90	2.A	Rotate; WOB-28, DP-675, GPM-508, RPM-60				
22:15	22:30	0:15				10	C/S @ 2574; Inc-3.3, Azm-6.7, DLS-0.79	RYAN MWD Representative (s)			
22:30	23:00	0:30	2616	2712	96	2.A	Rotate; WOB-28, DP-675, GPM-508, RPM-60	Chris Riggins		John Newsom	
23:00	23:15	0:15				10	C/S @ 2670; Inc-2.8, Azm-359.6, DLS-0.65				
23:15	23:30	0:15	2712	2722	10	2.B	Slide @ 0 MTF; WOB-17, DP-300, GPM-528	24 Hour Breakdown			
23:30	23:45	0:15	2722	2809	87	2.A	Rotate; WOB-28, DP-675, GPM-528, RPM-60	Ftg Rot.	722	Time Rot.	4.00
23:45	23:59	0:14				10	C/S @ 2767; Inc-3.3, Azm-5.0, DLS-0.59	Ftg Orient	53	Time Orient	1.50
								Rot. ROP	180.50	Orient ROP	35.33

Report #: 2

Date: 12-Feb-15



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 8716

## DAILY DRILLING REPORT

Oil Company: EP Energy  
 Field: Altamont Field  
 County, State: Duchesne, UT  
 AFE or PO #: 160118

Customer: EP Energy  
 Well Name & No.: Anderson 2-21 C4  
 Block or Section: Sec 21-T3S-R4W  
 Rig Contractor & No.: Precision 406

00:00 Depth: 2809  
 24:00 Depth: 4154

Footage Today: 1345  
 Current Run Ftg: 2120

Drig Hrs Today: 6.30  
 Run Drig Hrs: 11.80

ROP Today: 213.49  
 Run Avg. ROP: 179.66

Last Casing Set: 9 5/8  
 Depth: 2034

						Previous		Current			
PUMP Data Total Gals/Min =			528	MUD DATA			BHA #	1	BHA #	MOTOR DATA	CURRENT
Pump	Pump 1	Pump 2	0	Mud Type	WBM			Bit		Run No.	1
Liner (in)	5	5		Sample	IN			Motor		Size (in.)	6 3/4
%	95	95		Time	3:00			EM MWD		Type	7/8 5.0 Stage
Vol (gps)	2.42	2.42	0.00	Wt.	9.7			UBHO Sub		Serial No.	RY675090
SPM	109	109		VIS	55			NMDC (MWD)		Tool Deflection	1.5 FBH
DRILLING PARAMETERS				PV	18			NMDC		Avg. Diff. Press.	
ST. WT. ROT 1000's:		105		YP	15			X-O Sub		Daily Drill Hrs.	6.30
P/U WT. 1000's:		110		WL	3			16 Jnts 6 1/2" DC's		Daily Circ. Hrs.	3.30
S/O WT. 1000's:		100		CL	2500			9 Jnts 4 1/2" HWDP		Daily Total Hrs:	9.60
WOB 1000's:		31		Gels	5,18,31					Acc. Drill Hrs.	11.80
ROTARY RPM:		60		% Oil	0					Acc. Circ. Hrs.	6.30
MOTOR RPM:		148		% Solids	6.9					Depth In	2034
TOTAL Bit RPM		208		% Sand	0.5					Depth Out	
ROT TQ. OFF BTM:		1200		PH	10.4					LIH Hrs.	9:45
ROT TQ. ON BTM:		3100		Temp F	80			Total = 886.67'		Acc. LIH Hrs.	22.00
Current Mag Dec:		11.12		MWD F	115	BHA WT				Acc. Hrs Cir/Drilg	18.10
Pulse Hight				GPM	528	BELOW JARS				Total K Revs	147.26
*G* Totals		1		PSI	2300					Jar # HRS	

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
1	8 3/4	Security	MM54D	12633472	5x13	2034													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown	Current Operations			
0:00	0:15	0:15	2809	2905	96	2.A	Rotate; WOB-28, DP-675, GPM-528, RPM-60				
0:15	0:30	0:15				10	C/S @ 2863; Inc-2.7, Azm-0.4, DLS-0.67	Drill ahead in intermediate section			
0:30	0:45	0:15	2905	2915	10	2.B	Slide @ 0 MTF; WOB-17, DP-300, GPM-528				
0:45	1:00	0:15	2915	3000	85	2.A	Rotate; WOB-28, DP-675, GPM-528, RPM-60				
1:00	1:15	0:15				10	C/S @ 2958; Inc-3.3, Azm-4.9, DLS-0.68				
1:15	1:30	0:15	3000	3096	96	2.A	Rotate; WOB-28, DP-675, GPM-528, RPM-60				
1:30	1:45	0:15				10	C/S @ 3054; Inc-2.5, Azm-4.6, DLS-0.83				
1:45	2:00	0:15	3096	3108	12	2.B	Slide @ 0 MTF; WOB-17, DP-300, GPM-528				
2:00	2:15	0:15	3108	3192	84	2.A	Rotate; WOB-28, DP-675, GPM-528, RPM-60				
2:15	2:30	0:15				7	Rig Service				
2:30	2:45	0:15				10	C/S @ 3150; Inc-3.1, Azm-2.3, DLS-0.64	Estimated Daily Charges			
2:45	3:00	0:15	3192	3204	12	2.B	Slide @ 0 MTF; WOB-17, DP-300, GPM-528	Description		Cost	
3:00	3:15	0:15	3204	3289	85	2.A	Rotate; WOB-28, DP-675, GPM-528, RPM-60				
3:15	3:30	0:15				10	C/S @ 3247; Inc-3.9, Azm-350.2, DLS-1.12				
3:30	3:45	0:15	3289	3384	95	2.A	Rotate; WOB-28, DP-675, GPM-528, RPM-60				
3:45	4:00	0:15				10	C/S @ 3342; Inc-3.0, Azm-340.8, DLS-1.11				
4:00	4:15	0:15	3384	3394	10	2.B	Slide @ 0 MTF; WOB-17, DP-300, GPM-528				
4:15	4:30	0:15	3394	3481	87	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60				
4:30	4:45	0:15				10	C/S @ 3439; Inc-3.2, Azm-354.8, DLS-0.80				
4:45	5:00	0:15	3481	3489	8	2.B	Slide @ 0 MTF; WOB-15, DP-300, GPM-528				
5:00	5:15	0:15	3489	3577	88	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60				
5:15	5:30	0:15				10	C/S @ 3535; Inc-3.8, Azm-3.9, DLS-0.85				
5:30	5:45	0:15	3577	3673	96	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60	Estimated Daily Cost (USD)		\$	-
5:45	6:00	0:15				10	C/S @ 3631; Inc-2.9, Azm-353.9, DLS-1.11	Accumulated Cost (USD)		\$	-
6:00	6:15	0:15	3673	3683	10	2.B	Slide @ 0 MTF; WOB-15, DP-300, GPM-528	Company Representative (s)			
6:15	6:30	0:15	3683	3769	86	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60	Tony Wilkerson			
6:30	6:45	0:15				10	C/S @ 3727; Inc-2.7, Azm-356.80, DLS-0.26	Bill Owen			
6:45	7:00	0:15	3769	3779	10	2.B	Slide @ 0 MTF; WOB-15, DP-300, GPM-528	RYAN Directional Representative (s)			
7:00	7:30	0:30	3779	3865	86	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60	Andrew Biem			
7:30	7:45	0:15				10	C/S @ 3823; Inc-3.1, Azm-351.4, DLS-0.50				
7:45	8:00	0:15	3865	3875	10	2.B	Slide @ 0 MTF; WOB-15, DP-300, GPM-528	RYAN MWD Representative (s)			
8:00	8:30	0:30	3875	3961	86	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60	Chris Riggins		John Newsom	
8:30	8:45	0:15				10	C/S @ 3919; Inc-3.0, Azm-356.9, DLS-0.32				
8:45	9:00	0:15	3961	3976	15	2.B	Slide @ 0 MTF; WOB-19, DP-300, GPM-528	24 Hour Breakdown			
9:00	9:15	0:15	3976	4058	82	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60	Ftg Rot.	1248	Time Rot.	4.00
9:15	9:30	0:15				10	C/S @ 4016; Inc-3.9, Azm-14.0, DLS-1.40	Ftg Orient	97	Time Orient	2.30
9:30	9:45	0:15	4058	4154	96	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60	Rot. ROP	312.00	Orient ROP	42.17



Report #: 2A

Date: 12-Feb-15



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 8716

## DAILY DRILLING REPORT

Oil Company: EP Energy  
 Field: Altamont Field  
 County, State: Duchesne, UT  
 AFE or PO #: 160118

Customer: EP Energy  
 Well Name & No.: Anderson 2-21 C4  
 Block or Section: Sec 21-T3S-R4W  
 Rig Contractor & No.: Precision 406

00:00 Depth: 4154  
 24:00 Depth: 5402

Footage Today: 1248  
 Current Run Ftg: 3368

Drig Hrs Today: 7.30  
 Run Drig Hrs: 19.10

ROP Today: 170.96  
 Run Avg. ROP: 176.34

Last Casing Set: 9 5/8  
 Depth: 2034

PUMP Data Total Gals/Min = 528				MUD DATA		Previous	Current	MOTOR DATA	CURRENT
Pump	Pump 1	Pump 2	0	Mud Type	WBM	BHA #	1	Bit	Run No.
Liner (in)	5	5		Sample	IN			Motor	Size (in.)
%	95	95		Time	3:00			EM MWD	Type
Vol (gals)	2.42	2.42	0.00	Wt.	9.7			UBHO Sub	Serial No.
SPM	109	109		VIS	55			NMDC (MWD)	Tool Deflection
DRILLING PARAMETERS				PV	18			NMDC	Avg. Diff. Press.
ST. WT. ROT 1000's:	105			YP	15			X-O Sub	Daily Drill Hrs.
P/U WT. 1000's:	110			WL	3			16 Jnts 6 1/2" DC's	Daily Circ. Hrs.
S/O WT. 1000's:	100			CL	2500			9 Jnts 4 1/2" HWDP	Daily Total Hrs.
WOB 1000's:	31			Gels	5,18,31				Acc. Drill Hrs.
ROTARY RPM:	60			% Oil	0				Acc. Circ. Hrs.
MOTOR RPM:	148			% Solids	6.9				Depth In
TOTAL Bit RPM	208			% Sand	0.5				Depth Out
ROT TQ. OFF BTM:	1200			PH	10.4				LIH Hrs.
ROT TQ. ON BTM:	5000			Temp F	80			Total = 886.67'	Acc. LIH Hrs.
Current Mag Dec:	11.12			MWD F	115	BHA WT			Acc. Hrs Cir/Drilg
Pulse Height				GPM	528	BELOW JARS			Total K Revs
*G* Totals	1			PSI	2400				Jar # HRS

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
1	8 3/4	Security	MM54D	12633472	5x13	2034													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown	Current Operations
9:45	10:00	0:15				10	C/S @ 4112; Inc-2.7, Azm-16.7, DLS-1.26	
10:00	10:15	0:15	4154	4169	15	2.B	Slide @ 0 MTF; WOB-19, DP-300, GPM-528	Drill ahead in intermediate section
10:15	10:45	0:30	4169	4250	81	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60	
10:45	11:00	0:15				10	C/S @ 4208; Inc-2.7, Azm-24.4, DLS-0.38	
11:00	11:15	0:15	4250	4265	15	2.B	Slide @ 0 MTF; WOB-19, DP-300, GPM-528	
11:15	11:30	0:15	4265	4347	82	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60	
11:30	11:45	0:15				10	C/S @ 4305; Inc-3.2, Azm-12.8, DLS-0.81	
11:45	11:50	0:05	4347	4362	15	2.B	Slide @ 0 MTF; WOB-19, DP-300, GPM-528	
11:50	12:05	0:15	4362	4443	81	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60	
12:05	12:30	0:25				7	Rig Service	
12:30	12:45	0:15				10	C/S @ 4401; Inc-2.9, Azm-27.1, DLS-0.86	Estimated Daily Charges
12:45	13:00	0:15	4443	4461	18	2.B	Slide @ 0 MTF; WOB-14, DP-300, GPM-528	Description Cost
13:00	13:15	0:15	4461	4539	78	2.A	Rotate; WOB-31, DP-575, GPM-528, RPM-60	
13:15	13:30	0:15				10	C/S @ 4497; Inc-3.3, Azm-32.1, DLS-0.50	
13:30	14:00	0:30	4539	4557	18	2.B	Slide @ 330 MTF; WOB-14, DP-200, GPM-528	
14:00	14:15	0:15	4557	4635	78	2.A	Rotate; WOB-31, DP-575, GPM-528, RPM-60	
14:15	14:30	0:15				10	C/S @ 4593; Inc-3.1, Azm-3.3, DLS-1.67	
14:30	15:00	0:30	4635	4653	18	2.B	Slide @ 0 MTF; WOB-12, DP-200, GPM-528	
15:00	15:30	0:30	4653	4730	77	2.A	Rotate; WOB-31, DP-550, GPM-528, RPM-60	
15:30	15:45	0:15				10	C/S @ 4688; Inc-3.0, Azm-11.3, DLS-0.46	
15:45	16:15	0:30	4730	4748	18	2.B	Slide @ 0 MTF; WOB-19, DP-200, GPM-528	
16:15	16:30	0:15	4748	4826	78	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60	
16:30	16:45	0:15				10	C/S @ 4784; Inc-3.7, Azm-5.8, DLS-0.80	Estimated Daily Cost (USD) \$ -
16:45	17:00	0:15	4826	4923	97	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60	Accumulated Cost (USD) \$ -
17:00	17:15	0:15				10	C/S @ 4881; Inc-1.9, Azm-354.6, DLS-1.93	Company Representative (s)
17:15	17:45	0:30	4923	4941	18	2.B	Slide @ 0 MTF; WOB-19, DP-200, GPM-528	Tony Wilkerson
17:45	18:00	0:15	4941	5017	76	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60	Bill Owen
18:00	18:15	0:15				10	C/S @ 4975; Inc-3.3, Azm-4.1, DLS-1.55	RYAN Directional Representative (s)
18:15	18:30	0:15	5017	5029	12	2.B	Slide @ 0 MTF; WOB-19, DP-200, GPM-528	Andrew Biem
18:30	18:45	0:15	5029	5113	84	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60	
18:45	19:00	0:15				10	C/S @ 5071; Inc-2.5, Azm-353.5, DLS-1.00	RYAN MWD Representative (s)
19:00	19:15	0:15	5113	5131	18	2.B	Slide @ 0 MTF; WOB-19, DP-200, GPM-528	Chris Riggins John Newsom
19:15	19:45	0:30	5131	5209	78	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60	
19:45	20:00	0:15				10	C/S @ 5167; Inc-3.8, Azm-356.9, DLS-1.37	24 Hour Breakdown
20:00	20:15	0:15	5209	5305	96	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60	Ftg Rot. 1083 Time Rot. 4.00
20:15	20:30	0:15				10	C/S @ 5263; Inc-3.5, Azm-347.2, DLS-0.71	Ftg Orient 165 Time Orient 3.30
20:30	20:45	0:15	5305	5402	97	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60	Rot. ROP 270.75 Orient ROP 50.00

RECEIVED: Jan. 06, 2017

Report #: 2B

Date: 12-Feb-15



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 8716

## DAILY DRILLING REPORT

Oil Company: EP Energy  
 Field: Altamont Field  
 County, State: Duchesne, UT  
 AFE or PO #: 160118

Customer: EP Energy  
 Well Name & No.: Anderson 2-21 C4  
 Block or Section: Sec 21-T3S-R4W  
 Rig Contractor & No.: Precision 406

00:00 Depth: 5402  
 24:00 Depth: 5794

Footage Today: 392  
 Current Run Ftg: 3760

Drig Hrs Today: 2.00  
 Run Drig Hrs: 21.10

ROP Today: 196.00  
 Run Avg. ROP: 178.20

Last Casing Set: 9 5/8  
 Depth: 2034

PUMP Data Total Gals/Min = 528				MUD DATA		Previous	BHA #	Current	1	BHA #	MOTOR DATA	CURRENT
Pump	Pump 1	Pump 2	0	Mud Type	WBM			Bit			Run No.	1
Liner (in)	5	5		Sample	IN			Motor			Size (in.)	6 3/4
%	95	95		Time	3:00			EM MWD			Type	7/8 5.0 Stage
Vol (gps)	2.42	2.42	0.00	Wt.	9.7			UBHO Sub			Serial No.	RY675090
SPM	109	109		VIS	55			NMDC (MWD)			Tool Deflection	1.5 FBH
DRILLING PARAMETERS				PV	18			NMDC			Avg. Diff. Press.	
ST. WT. ROT 1000's:		105		YP	15			X-O Sub			Daily Drill Hrs.	2.00
P/U WT. 1000's:		110		WL	3			16 Jnts 6 1/2" DC's			Daily Circ. Hrs.	1.30
S/O WT. 1000's:		100		CL	2500			9 Jnts 4 1/2" HWDP			Daily Total Hrs:	3.30
WOB 1000's:		31		Gels	5,18,31						Acc. Drill Hrs.	21.10
ROTARY RPM:		60		% Oil	0						Acc. Circ. Hrs.	10.90
MOTOR RPM:		148		% Solids	6.9						Depth In	2034
TOTAL Bit RPM		208		% Sand	0.5						Depth Out	
ROT TQ. OFF BTM:		1200		PH	10.4						LIH Hrs.	3:15
ROT TQ. ON BTM:		5000		Temp F	80			Total = 886.67'			Acc. LIH Hrs.	46.00
Current Mag Dec:		11.12		MWD F	115		BHA WT				Acc. Hrs Cir/Drilg	32.00
Pulse Hight				GPM	528		BELOW JARS				Total K Revs	263.33
*G* Totals		1		PSI	2400						Jar # HRS	

BIT DATA																	
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	DULL CONDITION							
										IR	OR	DC	LOC	B/S	G/16"	OC	RPLD
1	8 3/4	Security	MM54D	12633472	5x13	2034											

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown	Current Operations			
20:45	21:00	0:15				10	C/S @ 5360; Inc-2.4, Azm-338.6, DLS-1.22				
21:00	21:15	0:15	5402	5498	96	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60	Drill ahead in intermediate section			
21:15	21:30	0:15				10	C/S @ 5456; Inc-2.3, Azm-326.4, DLS-0.53				
21:30	22:00	0:30	5498	5595	97	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60				
22:00	22:15	0:15				10	C/S @ 5553; Inc-1.4, Azm-307.5, DLS-1.11				
22:15	22:30	0:15	5595	5613	18	2.B	Slide @ 30 MTF; WOB-19, DP-200, GPM-528				
22:30	22:45	0:15	5613	5690	77	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60				
22:45	23:00	0:15				10	C/S @ 5648; Inc-1.5, Azm-353.0, DLS-1.18				
23:00	23:30	0:30	5690	5786	96	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60				
23:30	23:45	0:15				10	C/S @ 5744; Inc-0.9, Azm-328.8, DLS-0.81				
23:45	23:59	0:14	5786	5794	8	2.B	Slide @ 10 MTF; WOB-19, DP-200, GPM-528	Estimated Daily Charges			
								Description		Cost	
					</						

Report #: 3

Date: 13-Feb-15

**RYAN DIRECTIONAL SERVICES, INC.**

A NABORS COMPANY

Ryan Job #: 8716

**DAILY DRILLING REPORT**

Oil Company: **EP Energy**  
 Field: **Altamont Field**  
 County, State: **Duchesne, UT**  
 AFE or PO #: **160118**

Customer: **EP Energy**  
 Well Name & No.: **Anderson 2-21 C4**  
 Block or Section: **Sec 21-T3S-R4W**  
 Rig Contractor & No.: **Precision 406**

00:00 Depth: 5794  
 24:00 Depth: 7420

Footage Today: 1626  
 Current Run Ftg: 5386

Drig Hrs Today: 16.50  
 Run Drig Hrs: 37.60

ROP Today: 98.55  
 Run Avg. ROP: 143.24

Last Casing Set: 9 5/8  
 Depth: 2034

						Previous		Current			
PUMP Data Total Gals/Min =			508	MUD DATA			BHA #	1	BHA #	MOTOR DATA	CURRENT
Pump	Pump 1	Pump 2	0	Mud Type	WBM				Bit	Run No.	1
Liner (in)	5	5		Sample	IN				Motor	Size (in.)	6 3/4
%	95	95		Time	3:00				EM MWD	Type	7/8 5.0 Stage
Vol (gps)	2.42	2.42	0.00	Wt.	9.7				UBHO Sub	Serial No.	RY675090
SPM	105	105		VIS	55				NMDC (MWD)	Tool Deflection	1.5 FBH
DRILLING PARAMETERS				PV	18				NMDC	Avg. Diff. Press.	
ST. WT. ROT 1000's:		180		YP	15				X-O Sub	Daily Drill Hrs.	16.50
P/U WT. 1000's:		200		WL	3			16 Jnts 6 1/2" DC's	Daily Circ. Hrs.	4.30	
S/O WT. 1000's:		170		CL	2500			9 Jnts 4 1/2" HWDP	Daily Total Hrs:	20.80	
WOB 1000's:		31		Gels	5,18,31				Acc. Drill Hrs.	37.60	
ROTARY RPM:		60		% Oil	0				Acc. Circ. Hrs.	15.20	
MOTOR RPM:		142		% Solids	6.9				Depth In	2034	
TOTAL Bit RPM		202		% Sand	0.5				Depth Out		
ROT TQ. OFF BTM:		1200		PH	10.4				LIH Hrs.	21:00	
ROT TQ. ON BTM:		5000		Temp F	80			Total = 886.67'	Acc. LIH Hrs.	67.00	
Current Mag Dec:		11.12		MWD F	115	BHA WT			Acc. Hrs Cir/Drilg	52.80	
Pulse Hight				GPM	508	BELOW JARS			Total K Revs	455.71	
*G* Totals		1		PSI	2500				Jar # HRS		

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
1	8 3/4	Security	MM54D	12633472	5x13	2034													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown	Current Operations			
0:00	0:45	0:45	5794	5883	89	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60				
0:45	1:00	0:15				10	C/S @ 5841; Inc-1.1, Azm-358.9, DLS-0.57	Drill ahead in intermediate section			
1:00	1:45	0:45	5883	5979	96	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60				
1:45	2:00	0:15				10	C/S @ 5937; Inc-0.4, Azm-291.2, DLS-1.06				
2:00	3:15	1:15	5979	6076	97	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60				
3:15	3:30	0:15				10	C/S @ 6034; Inc-0.5, Azm-243.3, DLS-0.39				
3:30	4:30	1:00	6076	6171	95	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60				
4:30	4:45	0:15				10	C/S @ 6129; Inc-0.6, Azm-199.8, DLS-0.44				
4:45	5:30	0:45	6171	6267	96	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60				
5:30	5:45	0:15				10	C/S @ 6225; Inc-1.1, Azm-209.2, DLS-0.54				
5:45	6:45	1:00	6267	6363	96	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60	Estimated Daily Charges			
6:45	7:00	0:15				10	C/S @ 6321; Inc-1.2, Azm-194.2, DLS-0.33	Description		Cost	
7:00	7:45	0:45	6363	6460	97	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60				
7:45	8:00	0:15				10	C/S @ 6418; Inc-1.3, Azm-200.3, DLS-0.17				
8:00	9:00	1:00	6460	6556	96	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60				
9:00	9:15	0:15				10	C/S @ 6514; Inc-1.9, Azm-196.0, DLS-0.64				
9:15	10:15	1:00	6556	6652	96	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60				
10:15	10:30	0:15				10	C/S @ 6610; Inc-2.1, Azm-203.2, DLS-0.33				
10:30	11:15	0:45	6652	6748	96	2.A	Rotate; WOB-31, DP-525, GPM-528, RPM-60				
11:15	11:30	0:15				10	C/S @ 6706; Inc-2.1, Azm-197.3, DLS-0.23				
11:30	12:15	0:45	6748	6844	96	2.A	Rotate; WOB-31, DP-525, GPM-508, RPM-60				
12:15	12:30	0:15				7	Rig Service				
12:30	12:45	0:15				10	C/S @ 6802; Inc-2.5, Azm-198.2, DLS-0.42	Estimated Daily Cost (USD)		\$ -	
12:45	13:30	0:45	6844	6939	95	2.A	Rotate; WOB-31, DP-525, GPM-508, RPM-60	Accumulated Cost (USD)		\$ -	
13:30	13:45	0:15				10	C/S @ 6897; Inc-2.9, Azm-191.0, DLS-0.55	Company Representative (s)			
13:45	14:45	1:00				2.B	Slide @ 0 MTF; WOB-28, DP-100, GPM-508	Tony Wilkerson			
14:45	15:45	1:00	6939	7035	96	2.A	Rotate; WOB-31, DP-525, GPM-508, RPM-60	Bill Owen			
15:45	16:00	0:15				10	C/S @ 6993; Inc-2.5, Azm-190.9, DLS-0.41	RYAN Directional Representative (s)			
16:00	17:00	1:00	7035	7131	96	2.A	Rotate; WOB-31, DP-525, GPM-508, RPM-60	Andrew Biem			
17:00	17:15	0:15				10	C/S @ 7089; Inc-2.9, Azm-184.3, DLS-0.53				
17:15	18:00	0:45	7131	7146	15	2.B	Slide @ 0 MTF; WOB-22, DP-200, GPM-508	RYAN MWD Representative (s)			
18:00	18:45	0:45	7146	7228	82	2.A	Rotate; WOB-31, DP-525, GPM-508, RPM-60	Chris Riggins		John Newsom	
18:45	19:00	0:15				10	C/S @ 7186; Inc-2.1, Azm-199.2, DLS-1.06				
19:00	19:45	0:45	7228	7324	96	2.A	Rotate; WOB-31, DP-525, GPM-508, RPM-60	24 Hour Breakdown			
19:45	20:00	0:15				10	C/S @ 7282; Inc-2.6, Azm-202.9, DLS-0.54	Ftg Rot.	1611	Time Rot.	14.80
20:00	20:45	0:45	7324	7420	96	2.A	Rotate; WOB-31, DP-525, GPM-508, RPM-60	Ftg Orient	15	Time Orient	1.80
20:45	21:00	0:15				10	C/S @ 7378; Inc-2.8, Azm-190.4, DLS-0.65	Rot. ROP	108.85	Orient ROP	8.33

RECEIVED: Jan. 06, 2017



Report #: 4

Date: 14-Feb-15

**RYAN DIRECTIONAL SERVICES, INC.**

A NABORS COMPANY

Ryan Job #: 8716

**DAILY DRILLING REPORT**

Oil Company: **EP Energy**  
 Field: **Altamont Field**  
 County, State: **Duchesne, UT**  
 AFE or PO #: **160118**

Customer: **EP Energy**  
 Well Name & No.: **Anderson 2-21 C4**  
 Block or Section: **Sec 21-T3S-R4W**  
 Rig Contractor & No.: **Precision 406**

00:00 Depth: 7521  
 24:00 Depth: 8900

Footage Today: 1379  
 Current Run Ftg: 6866

Drig Hrs Today: 16.80  
 Run Drig Hrs: 57.10

ROP Today: 82.08  
 Run Avg. ROP: 120.25

Last Casing Set: 9 5/8  
 Depth: 2034

						Previous		Current			
PUMP Data Total Gals/Min =			460	MUD DATA			BHA #	1	BHA #	MOTOR DATA	CURRENT
Pump	Pump 1	Pump 2	0	Mud Type	WBM				Bit	Run No.	1
Liner (in)	5	5		Sample	IN				Motor	Size (in.)	6 3/4
%	95	95		Time	3:00				EM MWD	Type	7/8 5.0 Stage
Vol (gps)	2.42	2.42	0.00	Wt.	9.7				UBHO Sub	Serial No.	RY675090
SPM	95	95		VIS	55				NMDC (MWD)	Tool Deflection	1.5 FBH
DRILLING PARAMETERS				PV	18				NMDC	Avg. Diff. Press.	
ST. WT. ROT 1000's:		180		YP	15				X-O Sub	Daily Drill Hrs.	16.80
P/U WT. 1000's:		200		WL	3				16 Jnts 6 1/2" DC's	Daily Circ. Hrs.	7.00
S/O WT. 1000's:		170		CL	2500				9 Jnts 4 1/2" HWDP	Daily Total Hrs:	23.80
WOB 1000's:		31		Gels	5,18,31					Acc. Drill Hrs.	57.10
ROTARY RPM:		60		% Oil	0					Acc. Circ. Hrs.	22.50
MOTOR RPM:		129		% Solids	6.9					Depth In	2034
TOTAL Bit RPM		189		% Sand	0.5					Depth Out	8900
ROT TQ. OFF BTM:		1200		PH	10.4					LIH Hrs.	23:59
ROT TQ. ON BTM:		5000		Temp F	80				Total = 886.67'	Acc. LIH Hrs.	93.98
Current Mag Dec:		11.12		MWD F	115	BHA WT				Acc. Hrs Cir/Drilg	79.60
Pulse Hight				GPM	460	BELOW JARS				Total K Revs	647.51
*G* Totals		1		PSI	2600					Jar # HRS	

BIT DATA																	
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	DULL CONDITION							
										IR	OR	DC	LOC	B/S	G/16"	OC	RPLD
1	8 3/4	Security	MM54D	12633472	5x13	2034	6866	57.1	8900								TD

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown	Current Operations			
0:00	0:45	0:45	7521	7532	11	2.B	Slide @ 350 MTF; WOB-21, DP-200, GPM-508				
0:45	2:00	1:15	7532	7611	79	2.A	Rotate; WOB-31, DP-525, GPM-508, RPM-60	Drill ahead in intermediate section			
2:00	2:15	0:15				10	C/S @ 7569; Inc-2.3, Azm-167.8, DLS-0.68				
2:15	3:00	0:45	7611	7707	96	2.A	Rotate; WOB-31, DP-525, GPM-508, RPM-60				
3:00	3:15	0:15				10	C/S @ 7665; Inc-2.1, Azm-176.5, DLS-0.46				
3:15	3:45	0:30	7707	7802	95	2.A	Rotate; WOB-31, DP-525, GPM-508, RPM-60				
3:45	4:00	0:15				10	C/S @ 7760; Inc-2.2, Azm-194.5, DLS-0.72				
4:00	5:00	1:00	7802	7898	96	2.A	Rotate; WOB-31, DP-525, GPM-508, RPM-60				
5:00	5:15	0:15				10	C/S @ 7856; Inc-2.5, Azm-189.9, DLS-0.48				
5:15	6:30	1:15	7898	7993	95	2.A	Rotate; WOB-31, DP-525, GPM-508, RPM-60				
6:30	6:45	0:15				10	C/S @ 7951; Inc-2.5, Azm-186.2, DLS-0.01	Estimated Daily Charges			
6:45	8:00	1:15	7993	8089	96	2.A	Rotate; WOB-31, DP-525, GPM-508, RPM-60	Description		Cost	
8:00	8:15	0:15				10	C/S @ 8047; Inc-2.4, Azm-181.8, DLS-0.22				
8:15	9:45	1:30	8089	8185	96	2.A	Rotate; WOB-31, DP-525, GPM-508, RPM-60				
9:45	10:00	0:15				10	C/S @ 8143; Inc-2.5, Azm-179.9, DLS-0.13				
10:00	11:00	1:00	8185	8281	96	2.A	Rotate; WOB-31, DP-525, GPM-494, RPM-60				
11:00	11:15	0:15				10	C/S @ 8239; Inc-3.0, Azm-180.5, DLS-0.52				
11:15	12:00	0:45	8281	8299	18	2.B	Slide @ 0 MTF; WOB-14, DP-200, GPM-494				
12:00	12:45	0:45	8299	8378	79	2.A	Rotate; WOB-31, DP-525, GPM-494, RPM-60				
12:45	13:00	0:15				10	C/S @ 8336; Inc-2.0, Azm-168.4, DLS-1.16				
13:00	13:15	0:15				7	Rig Service				
13:15	14:00	0:45	8378	8473	95	2.A	Rotate; WOB-31, DP-525, GPM-494, RPM-60				
14:00	14:15	0:15				10	C/S @ 8431; Inc-2.8, Azm-162.8, DLS-0.88	Estimated Daily Cost (USD)		\$ -	
14:15	15:00	0:45	8473	8493	20	2.B	Slide @ 340 MTF; WOB-14, DP-200, GPM-494	Accumulated Cost (USD)		\$ -	
15:00	15:45	0:45	8493	8569	76	2.A	Rotate; WOB-31, DP-525, GPM-494, RPM-60	Company Representative (s)			
15:45	16:00	0:15				10	C/S @ 8527; Inc-0.3, Azm-204.3, DLS-2.69	Tony Wilkerson			
16:00	16:30	0:30	8569	8665	96	2.A	Rotate; WOB-31, DP-525, GPM-494, RPM-60	Bill Owen			
16:30	16:45	0:15				10	C/S @ 8623; Inc-0.8, Azm-173.5, DLS-0.59	RYAN Directional Representative (s)			
16:45	17:30	0:45	8665	8761	96	2.A	Rotate; WOB-31, DP-525, GPM-460, RPM-60	Andrew Biem			
17:30	17:45	0:15				10	C/S @ 8719; Inc-2.5, Azm-199.2, DLS-1.89				
17:45	18:15	0:30	8761	8775	14	2.B	Slide @ 10 MTF; WOB-14, DP-200, GPM-460	RYAN MWD Representative (s)			
18:15	19:15	1:00	8775	8858	83	2.A	Rotate; WOB-31, DP-525, GPM-460, RPM-60	Chris Riggins		John Newsom	
19:15	19:30	0:15				10	C/S @ 8816; Inc-2.1, Azm-207.3, DLS-0.53				
19:30	19:45	0:15	8858	8885	27	2.A	Rotate; WOB-31, DP-525, GPM-460, RPM-60	24 Hour Breakdown			
19:45	20:30	0:45	8885	8900	15	2.B	Slide @ 10 MTF; WOB-14, DP-200, GPM-460	Ftg Rot.	1301	Time Rot.	13.30
20:30	20:45	0:15				10	SVY @ 8858; Inc-2.1, Azm-213.4, DLS-	Ftg Orient	78	Time Orient	3.50
20:45	23:59	3:14				5.A	Circulate bottoms up, well flowing, weight up	Rot. ROP	97.82	Orient ROP	22.29

Ryan Job # 8716

## DAILY DRILLING REPORT

Oil Company:	EP Energy
Field:	Altamont Field
County, State:	Duchesne, UT
AFF or PO #:	160118

Customer:	<b>EP Energy</b>
Well Name & No.:	<b>Anderson 2-21 C4</b>
Block or Section:	<b>Sec 21-T3S-R4W</b>
Rig Contractor & No.:	<b>Precision 406</b>

00:00 Depth:	8900
24:00 Depth:	8900

Footage Today:	0
Current Run Ftg:	6866

Drlg Hrs Today:	0.00
Run Drlg Hrs:	57.10

ROP Today:	-
Un. Avg. ROP:	120.25

Last Casing Set: 9 5/8  
Depth: 2034

PUMP DATA						Previous		Current		MOTOR DATA		CURRENT	
PUMP Data Total Gals/Min =			460	MUD DATA			BHA #	1	BHA #				
Pump	Pump 1	Pump 2	0	Mud Type	WBM				Bit	Run No.		1	
Liner (in)	5	5		Sample	IN				Motor	Size (in.)		6 3/4	
%	95	95		Time	3:00				EM MWD	Type		7/8 5.0 Stage	
Vol (gps)	2.42	2.42	0.00	Wt.	9.7				UBHO Sub	Serial No.		RY675090	
SPM	95	95		VIS	55				NMDC (MWD)	Tool Deflection		1.5 FBH	
DRILLING PARAMETERS				PV	18				NMDC	Avg. Diff. Press.			
ST. WT. ROT 1000's:		180		YP	15				X-O Sub	Daily Drill Hrs.		0.00	
P/U WT. 1000's:		200		WL	3				16 Jnts 6 1/2" DC's	Daily Circ. Hrs.		1.50	
S/O WT. 1000's:		170		CL	2500				9 Jnts 4 1/2" HWDP	Daily Total Hrs:		1.50	
WOB 1000's:		31		Gels	5,18,31					Acc. Drill Hrs.		57.10	
ROTARY RPM:		60		% Oil	0					Acc. Circ. Hrs.		24.00	
MOTOR RPM:		129		% Solids	6.9					Depth In		2034	
TOTAL Bit RPM		189		% Sand	0.5					Depth Out		8900	
ROT TQ. OFF BTM:		1200		PH	10.4					LIH Hrs.		9:30	
ROT TQ. ON BTM:		5000		Temp F	80				Total = 886.67'	Acc. LIH Hrs.		103.48	
Current Mag Dec:		11.12		MWD F	115	BHA WT				Acc. Hrs Cir/Drilg		81.10	
Pulse Hight				GPM	460	BELOW JARS				Total K Revs		647.51	
*G* Totals		1		PSI	2600					Jar # HRS			

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A NABORS COMPANY

## # 1

RECEIVED: Jan. 06, 2017




**RYAN DIRECTIONAL SERVICES, INC.**

A NABORS COMPANY

**Motor Run Report #1**

General Information:		In the Event of an Incident:	
Ryan Job #:	8716	Date of Incident:	
Customer:	EP Energy	Date Notified Office:	
Location:	Duchesne, UT	Person Notified:	
Lease:	Sec 21-T3S-R4W		
Well Name & Number:	Anderson 2-21 C4		
Rig Name & Number:	Precision 406	<b>Incident Comments:</b>	
Directional Driller ('s):	Andrew Biem		
<b>Motor Information:</b>		<b>Bit Information:</b>	
Motor Serial #:	RY675090	Bit Size:	8 3/4
Motor Size (OD):	6 3/4	Bit Type:	MM54D
Motor Company:	Ryan	Bit Manufacture:	Security
Motor Stabilizer Size:	True Slick	Serial #:	12633472
Degree Bent Housing:	1.50 FBH	Jets / TFA:	5x14
Rotor / Stator Conf.:	7/8 5.0 Stage		
Depth In:	2034	<b>Mud Information End of Run:</b>	
Depth Out:	8900	Mud Type:	WBM
Footage:	6866	Mud Weight:	9.7
Drilg Hours:	57.1	Viscosity:	55
Circulating Hours:	24	Plastic Vis:	18
Total Hours:	81.1	Yield Point:	15
Hours Below Rotary Table (LIH):	103.48	Sand %:	0.5
Motor Yield:		Solids %:	6.9
		LCM (yes or no):	No
		% LCM per/BBL:	N/A
		Static Temp:	80
		Circulating Temp:	115
		OBM Aniline Point:	
<b>Start of Run: Date</b>		February 11, 2015	
GPM'S:	475		
Standpipe Press / Off Bottom:	870		
Standpipe Press / On Bottom:	1345		
Weight on Bit Avg :	21		
<b>End Of Run: Date</b>		February 15, 2015	
GPM'S:	460		
Standpipe Press / Off Bottom:	2600		
Standpipe Press / On Bottom:	3200		
Weight on Bit Avg :	31		

**Comments**

TD hole section. Good motor run. Motor yields were consistently around 10/100 through entire run. On surface, motor had 1/4" slack from hanging to compressed as measured across mandrel gap. Motor drained with no issues and showed no signs of external wear.